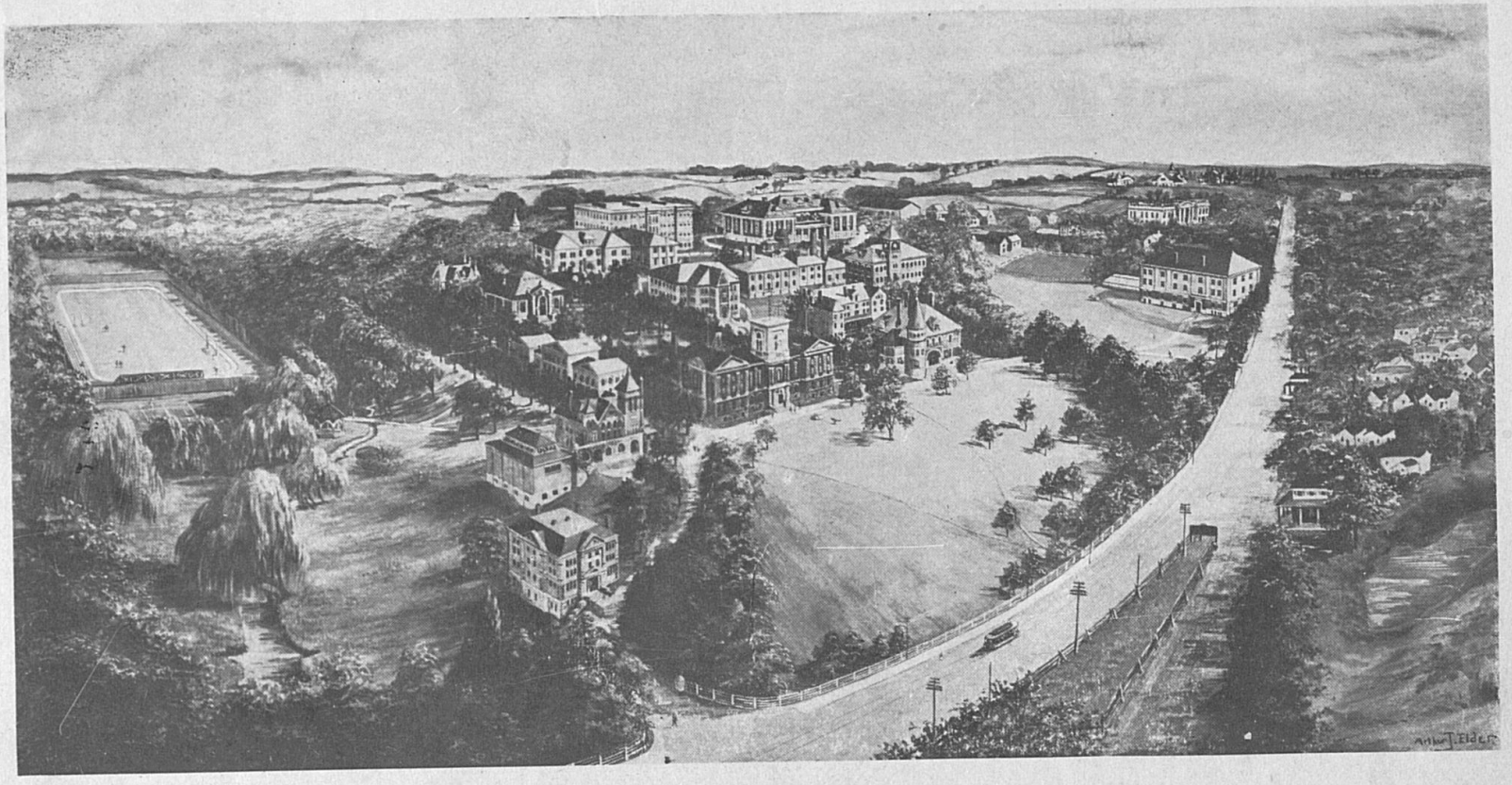


UNIVERSITY OF KENTUCKY

CATALOGUE

OF THE

UNIVERSITY OF KENTUCKY

1914—1915



LEXINGTON
PRINTED BY THE UNIVERSITY PRESS
MARCH, 1915.

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1915

JANUARY

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UNIVERSITY CALENDAR.

1915		
September 8, 9, 10, 11	Wed. Thurs. Fri. Sat.	Examinations for entrance,
September 8, 9, 10, 11	Wed. Thurs. Fri. Sat.	Examinations to remove conditions.
September 13, 14	Monday, Tuesday	Registration.
September 15	Wednesday	Instruction begun.
September 23	Thursday	Last day for any change in course without payment of fee.
October 8	Friday	Alumni reception to new students.
November 25, 26, 27, 28	Thurs. to Monday	Thanksgiving holiday.
November 26	Friday	Alumnae Luncheon.
November 29	Monday	Instruction resumed.
December 3	Friday	Barker Trophy.
December 4	Saturday	Assoc. Kentucky College.
December 14	Tuesday	Board of Trustees meets
December 17	Friday	Inter-Society Debate.
December 23, 1915, to January 3, 1916 inclusive	Thursday to Monday, inclusive	Christmas Holidays.
1916.		
January 4	Tuesday	Instruction resumed.
January 3, 4, 5, 6, 7, 8	Monday to Saturday inclusive	Farmers' Week.
January 3 to 8	Monday to Saturday	Examinations to remove conditions.
January 24 to 29	Monday to Saturday	Final examinations, first semester.
January 31	Monday	Registration for second semester.
February 1	Tuesday	Instruction resumed.
February 5	Saturday	Last day for engaging rooms in Dormitory.
February 22	Tuesday	Washington's Birthday.
February 22	Tuesday	Barker Prize.

March 25	Saturday	Patterson Literary Society Contest.
March 30	Thursday	Last day for receiving theses for higher degrees in Agriculture, Arts and Science.
April 13	Thursday	Last day for contestants in Henry Clews Japanese Society Contest to file papers.
April 21	Friday	Inspection Day.
April 21	Friday	Arbor Day.
April 29	Saturday	Last day for receiving Engineering Theses for higher degrees.
May 8 to 13	Monday to Saturday inclusive	Examinations to remove conditions.
May 29 to June 2	Monday to Saturday inclusive	Final Examination, first semester.

Commencement Week.

June 4	Sunday	Baccalaureate Sermon.
June 6	Tuesday	Board of Trustees meets.
June 7	Wednesday	Class Day.
June 7	Wednesday	Alumni Banquet.
June 8	Thursday	Forty-ninth Annual Commencement.

Summer Session.

June 14	Monday	Summer School opens.
July 22	Wednesday	Summer School closes.

SCHEDULE OF ENTRANCE EXAMINATIONS.

WEDNESDAY, SEPTEMBER 8, 1915.

8.00 to 10.00 A.M.	English (Reading and Practice)
10.00 to 12.00 A.M.	English (Study and Practice)
8.00 to 10.00 A.M.	Greek (Grammar and Composition)
10.00 to 12 00 A.M.	Greek (Homer and Xenophon)
1.30 to 3.30 P.M.	German (1, 2, 3)
3.30 to 5.30 P.M.	Solid Geometry

THURSDAY, SEPTEMBER 9, 1915.

8.00 to 10.00 A.M.	Latin (Grammar, Composition and Caesar)
10.00 to 12.00 A.M.	Latin (Cicero and Vergil)
8.00 to 10.00 A.M.	History (Ancient, Mediaeval and Modern)
10.00 to 12.00 A.M.	History (English, American and Civil Govt.)
1.30 to 3.30 P.M.	French
1.30 to 3.30 P.M.	Trigonometry

FRIDAY, SEPTEMBER 10, 1915.

8.00 to 10.00 A.M.	Plane Geometry
10.00 to 12.00 A.M.	Chemistry.
10.00 to 12.00 A.M.	Physics
1.30 to 3.30 P.M.	Botany
1.30 to 3.30 P.M.	Physiology

SATURDAY, SEPTEMBER 11, 1915.

8.00 to 10.00 A.M.	Algebra
10.00 to 12.00 A.M.	Physical Geography
8.00 to 10.00 A.M.	Geology
10.00 to 12.00 A.M.	Zoology

Part I.

OFFICERS OF ADMINISTRATION AND INSTRUCTION.

BOARD OF TRUSTEES.

OFFICERS.

HON. JAMES B. MCCREARY, Chairman.
WILLIAM T. LAFFERTY, Secretary.

EXECUTIVE COMMITTEE.

CHARLES B. NICHOLS, Chairman.

JOHNSON N. CAMDEN, CLAUDE B. TERRELL,
THOMAS LEWIS EDELEN, RICHARD C. STOLL.

EX-OFFICIO MEMBERS.

HON. JAMES B. MCCREARY, Governor	Frankfort
HENRY S. BARKER, President of State University	Lexington
BARKSDALE HAMLETT, Superintendent of Public Instruction	Frankfort

APPOINTED BY THE GOVERNOR.

Names and Addresses.	*Term Expires.*
JAMES BREATHITT, Hopkinsville	January, 1916
THOMAS LEWIS EDELEN, Frankfort	January, 1916
CHARLES B. NICHOLS, R. F. D., Lexington	January, 1916
JAMES K. PATTERSON, Lexington	January, 1916
JAMES W. TURNER, Paintsville	January, 1916
ROBERT W. BROWN, Louisville	January, 1918
TIBBIS CARPENTER, Scottsville	January, 1918
WILLIAM H. COX, Maysville	January, 1918
DENNY P. SMITH, Cadiz	January, 1918
CLAUDE B. TERRELL, Bedford	January, 1918
JOHNSON N. CAMDEN, Versailles	January, 1920
RICHARD C. STOLL, Lexington	January, 1920
LOUIS L. WALKER, Lancaster	January, 1920
RICHARD N. WATHEN, Lebanon	January, 1920
DR. A. GATLIFF, Williamsburg	January, 1920

ELECTED BY THE ALUMNI.

DR. SAMUEL BLACKBURN MARKS, Lexington	December, 1916
JOHN WESLEY WOODS, Ashland	December, 1916
GEORGE GREEN BROCK, London	December, 1918
JOHN EDWIN BROWN, Shelbyville	December, 1920
PHILIP PRESTON JOHNSTON, JR., Lexington	December, 1920

ADMINISTRATIVE OFFICERS.

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DEANS OF COLLEGES.

FREDERICK PAUL ANDERSON, Dean of the College of Mechanical and Electrical Engineering, Director of the Experimental Engineering Laboratories and Professor of Mechanical Engineering.

CHARLES JOSEPH NORWOOD, M.S., Dean of the College of Mines and Metallurgy and Professor of Mining and Metallurgy.

WALTER ELLSWORTH ROWE, C.E., Dean of the College of Civil Engineering and Professor of Civil Engineering.

ARTHUR MCQUISTON MILLER, A.M., Dean of the College of Arts and Science and Professor of Geology.

WILLIAM THORTON LAFFERTY, A.M., Dean of the College of Law and Professor of Law and Comptroller.

JOSEPH HOEING KASTLE, Ph.D., Director of Experiment Station and Dean of the College of Agriculture.

DEAN OF THE GRADUATE SCHOOL.

ALEXANDER ST. CLAIR MACKENZIE, M.A., Litt.D., LL.D., Dean of the Graduate School and Professor of English.

DEAN OF WOMEN.

ANNA JACKSON HAMILTON, M.A., Dean of Women and Associate Professor of English.

DEAN OF MEN.

COLUMBUS RUDOLPH MELCHER, A.M., Dean of Men and Professor of German.

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LILA BEATRICE TERRY, A.B., Private Secretary.

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HYWEL DAVIES, Business Agent.
JAMES BASIL LYONS, Cashier.
EMILY TAPP MCCANN, Secretary.
MRS. MAYME H. LENAGHAN, Bookkeeper.
MISS CARRIE BEAN, Bookkeeper.

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EZRA L. GILLIS, A.B., Registrar and Secretary.
LIZZIE LEE GRADDY, Assistant Registrar.
KATHERINE W. OWENS, Secretary.

OFFICE OF THE COMPTROLLER.

WILLIAM T. LAFFERTY, A.M., Comptroller.

OFFICE OF THE DEAN OF WOMEN.

ANNA JACKSON HAMILTON, M.A., Dean.

OFFICE OF THE DEAN OF MEN.

COLUMBUS RUDOLPH MELCHER, A.M., Dean.

THE UNIVERSITY LIBRARY.

MARGARET ISADORA KING, A.B., Librarian.

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PROFESSORS.

HENRY STITES BARKER, LL.D., Patterson Hall
President of the University.

JOSEPH HOEING KASTLE, PH.D. 238 East Maxwell
Director of Experiment Station, Dean of the College of Agriculture.

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MERRY LEWIS PENCE, M.S. 364 Merino
Professor of Physics, Head of the Department.

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Head of the College of Civil Engineering, Professor of Civil Engineering.

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Dean of the College of Law and Professor of Law and Comptroller.

MRS. ROBERT LEE STOUT Frankfort, Ky.
Physical Director of Women.

JOHN JULIAN HOOPER, M.S.A. 609 S. Limestone
Professor of Animal Husbandry, Head of the Department of Animal Husbandry (Dairy Cattle, Horses and Poultry) in the Experiment Station.

RALPH NELSON MAXSON, B.S., PH.D. 366 Transylvania Park
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Head of Food and Drug Department in the Experiment Station.

JAMES OSCAR LABACH, M.S. Preston Inn
Chief Chemist, Food and Drug Department in the Experiment Station.

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Professor of Animal Husbandry, Head of the Department of Animal Husbandry (Beef, Cattle, Sheep and Swine) in the Experiment Station.

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Professor of Rural and Highway Engineering, Head of the Department.

*On leave of absence.

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Professor of Law.

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Professor of Law.

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Commandant and Professor of Military Science and Tactics.

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Associate Professor of Veterinary Science, Assistant in Hog Cholera Serum Administration in the Experiment Station.

S. FOREST MUSSELMAN, V.S.
State Veterinarian.

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Assistant Professor of Mathematics.

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Assistant Professor of Home Economics.

*JAMES AARON FARRA, B.S. 459 West Sixth
Assistant Professor of Agricultural Engineering.

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Assistant Professor of Household Arts.

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Assistant Professor of Soil Physics, Soil Survey, Experiment Station.

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Assistant Professor of Law.

HOLLY RAY NISWONGER, M.A. 550 East Main
Assistant in Field Work and Nursery Inspection, Department of Entomology and Botany in the Experiment Station.

‡HERBERT BRADLEY HENDRICK, B.S., AGR. 421 Aylesford Place
Assistant Professor of Agronomy, Extension Department in the Experiment Station.

§EDWARD WOODYEAR MUMMA, V.M.D. 239 S. Limestone
Assistant-in-Charge of Hog Cholera Serum Production in the Experiment Station.

---

*On leave of absence.
†Resigned November 15, 1914.
‡Resigned January 1, 1915.
§Died December 4, 1914.

FRED WENZL HOFMAN, M.S. — Station Farm
Assistant Professor of Horticulture, Assistant in Horticulture in the Experiment Station.

FRANK THEODORE MCFARLAND, B.S., AGR. — 703 S. Limestone
Assistant Professor in Botany.

ARZA LYTLE WILHOITE, M.E. — 412 Rose Street
Assistant Professor in Experimental Steam Engineering.

JOHN SHERMAN HORINE, M.E. — 535 S. Limestone
Assistant Professor in Drawing.

JOHN JAMES CURTIS, M.E. — Y. M. C. A. Building
Assistant Professor in Testing of Materials.

PERRY ROGAN CASSIDY, B.M.E. — 169 Kentucky Ave.
Assistant Professor in Thermodynamics.

JOSEPH DICKER, — 199 Virginia Ave.
Superintendent of Shops, Head of Department of Practical Mechanics.

AVERY EARLY EWAN, B.S., AGR. — 315 East Maxwell
Superintendent of Experiment Fields, Department of Agronomy in the Experiment Station.

PERRY ELMER KARRAKER, M.A. — 327 S. Upper
Assistant Professor of Soils, Assistant Agronomist in the Experiment Station.

HENRY WEBB RICKEY, — 326 Harrison Ave.
Poultry Club Work, Department of Agricultural Extension. (In cooperation with the U. S. Department of Agriculture.)

THOMAS E. STOKES, B.S. — 336 S. Broadway Park
Pig Club Work, Department of Agricultural Extension. (In cooperation with the U. S. Department of Agriculture.)

L. R. HIMMELBERGER,
Assistant in Hog Cholera Serum Production in the Experiment Station.

INSTRUCTORS AND ASSISTANTS.

JOHN BORN DICKER, 122 Graham Avenue
Instructor in Wood Shop.

SARAH MARSHALL CHORN, A.B., A.M. Nicholasville Pike
Instructor in German.

GORDON THURMAN, 131 Virginia Avenue
Instructor in Steam and Electrical Laboratories.

JESSE VERNAN BAXTER, 342 Columbia Avenue
Engineer and Assistant in Wood Shop.

JOHN WILLIAM NUTTER, 149 Virginia Avenue
Superintendent of Dairy Farm, Department of Animal Husbandry (Dairy Cattle, Horses and Poultry), in the Experiment Station.

CHILTON SCOTT PORTER, A.B., PH.G. 430 East Maxwell
Drug Inspector, Food and Drug Department in the Experiment Station.

JAMES RAY DUNCAN, B.M.E. 429 Maple Avenue
Instructor in Electrical Engineering.

WILLIAM E. BUTT, A.B., M.A. 412 Woodland Avenue
Assistant in Economics.

ELMER INGRAM, Experiment Station
Chief Inspector, Feed Department in the Experiment Station.

*ELMER FRANCIS WORTHINGTON, B.S.AGR. 224 East High
Dairy Inspector, Food and Drug Department in the Experiment Station.

WALTER SHEPPELMAN, M.B. 429 Transylvania Park
Inspector, Bakery Sanitation, Food and Drug Department in the Experiment Station.

WILLIS GRANVILLE TERRELL, 464 North Broadway
Food Inspector, Food and Drug Department in the Experiment Station.

ROGER W. JONES 336 Madison Place
Instructor, Fertilizer and Feed Departments in the Experiment Station.

*Resigned January 1, 1915.

WALLACE VANDERPOOL SMITH, B.S. — 183 North Mill
Assistant in Animal Husbandry (Beef Cattle, Sheep and Swine) in the Experiment Station.

D. D. SLADE — 354 Linden Walk
Superintendent of Poultry Farm, Department of Animal Husbandry (Dairy Cattle, Horses and Poultry) in the Experiment Station.

EDWIN JOSEPH GOTT, B.S.AGR. — 819 S. Limestone
Assistant in Hog Cholera Serum Production in the Experiment Station.

CLARA WARLAND WHITE — 158 East Maxwell
Instructor in Department of Home Economics.

DILLON SEYMOUR MYER, B.S.AGR. — 312 South Upper
Instructor in Farm Crops.

CHARLES FRANCIS STILES, B.S. — 312 South Upper
Assistant in Entomology and Zoology.

IVAN POPPERS TASHOF, E.M. — 412 Linden Walk
Instructor in Mining and Assaying.

M. HUME BEDFORD, PH.D. — Paris, Ky.
Instructor in Physical Chemistry.

TEMPLE RICE HOLLCROFT, B.S. — 327 S. Upper
Instructor in Mathematics.

RALPH EMERSON BITNER, B.S. — 241 S. Limestone
Instructor in Physics.

MERVIN JOE KELLY, B.S. — 412 Linden Walk
Instructor in Physics.

RALPH S. DOUBLEDAY, B.S. — 609 S. Limestone
Instructor in Chemistry.

EDWIN L. GEORGER, B.CHEM. — 609 S. Limestone
Instructor in Chemistry.

HARRY S. CANNON, A.B., A.M. — 123 East Maxwell
Instructor in German.

ANGUS NEAL GORDON, A.B. — 180 East Maxwell
Instructor in Mathematics.

REUBEN THORNTON TAYLOR, A.B. — 317 Grosvenor Ave.
Instructor in English.

MARGUERITE MCLAUGHLIN, A.B. 226 East Maxwell
Instructor in Journalism.

MARY MCPHERSON 118 Bassett Court
Instructor in Freehand Drawing.

MARQUIS JOSEPH SMITH, B.S. 306 Grosvenor Ave.
Assistant in Animal Husbandry (Beef Cattle, Sheep and Swine) in the Experiment Station.

WILLIAM HERBERT SIMMONS, V.S. Louisville, Ky.
Assistant in Hog Cholera Serum Administration in the Experiment Station.

ARTHUR LOUIS BRUECKNER, B.S. AGR. 819 S. Limestone
Assistant in Hog Cholera Serum Administration in the Experiment Station.

PHILIP E. BACON Experiment Station
Tester of Dairy Herds, Department of Animal Husbandry (Dairy Cattle, Horses and Poultry) in the Experiment Station.

ROBERT PFANSTIEL, B S. IN INDUS. CHEM. 701 S. Limestone
Assistant in Chemical Department of Chemistry in the Experiment Station.

EDGAR H. NOLLAU, B.S. IN CHEM. 452 Rose Lane
Assistant Chemist, Feed Department in the Experiment Station.

ED. HUSTON 149 Virginia Ave.
Assistant in Dairying, Department of Animal Husbandry (Dairy Cattle, Horses and Poultry) in the Experiment Station.

JOSEPH WALKER REED 452 Rose Lane
Assistant Inspector of Mines and Instructor in the Examination of Mine Air.

WILLIAM BERNARD WILLIAMS State University
Assistant to the Commandant.

OTHER OFFICERS.

JOSEPH WILLIAM PRYOR, M.D. 261 North Broadway
Surgeon of the Battalion.

EZRA L. GILLIS, A.B. 287 South Limestone
Secretary of the Faculty.

MARY G. FISHER — Patterson Hall
Matron of Patterson Hall.

MRS. SARAH R. WEST MARSHALL — 718 Rose
Inspector of Dormitories.

MRS. ANNA BERRY JONES — 266 South Limestone
Secretary of the Superintendent of the Department of Agricultural Extension.

LUCY KELLAR HUTCHCRAFT, A.B. — 18 Mentelle Park
Clerk, Serum Laboratory in the Experiment Station.

LILLIE FRANCES LISTON — 270 South Limestone
Chief Clerk, Food and Drug Department in the Experiment Station.

ANNA WALLIS, A.B. — 326 Aylesford Place
Clerk, Fertilizer Department in the Experiment Station.

OLEVA LOUISE GINOCHIO — 240 Lexington Avenue
Secretary to the Director of the Experiment Station.

MAY GRACE GINOCHIO — 267 Lexington Avenue
Clerk, Department of Animal Husbandry (Beef Cattle, Sheep and Swine) in the Experiment Station.

FANNY CLARK ROGERS — 646 Central Avenue
Clerk, Feed Department in the Experiment Station.

LOUISE MARY BEWLEY — 169 North Broadway
Clerk, Department of Entomology and Botany in the Experiment Station.

ETHEL V. T. CASWALL — 179 East Maxwell
Clerk, Department of Chemistry in the Experiment Station.

EDITH LOVE — 227 North Upper
Secretary to the Professor of Chemistry.

MRS. NELL H. TURNER — 412 Linden Walk
Secretary to the Dean of the College of Mechanical and Electrical Engineering.

CORNELIA CORA PAGE — 355 North Broadway
Clerk, Department of Administration in the Experiment Station.

FANNIE WALLACE UTTERBACK — 626 North Limestone
Clerk, Department of Animal Husbandry (Dairy Cattle, Horses and Poultry) in the Experiment Station.

MURIAL CASWALL — 179 East Maxwell
Clerk, Department of Horticulture in the Experiment Station.

BELLA WITHERS — 628 West High
Secretary to the Department of Education.

NANCY B. BENTLEY — 388 South Broadway
Secretary to the Dean of the College of Mines and Metallurgy.

ADDIE LEE DEAN, A.M. — 302 Grosvenor Avenue
Librarian of the Experiment Station.

JESSIE FRAZIER CASWALL — 179 East Maxwell
Clerk, Department of Agronomy in the Experiment Station.

LENA LISTON — 270 South Limestone
Clerk, Food and Drug Department in the Experiment Station.

SUF DOROTHY MATTHEWS, B.S. — 229 South Limestone
Secretary to the Dean of the College of Arts and Science.

ETHEL JELLEY — 726 South Broadway
Mimeographer, College of Mechanical and Electrical Engineering.

MARGARET C. RYAN — 159 Forest Avenue
Clerk, Department of Agricultural Extension.

ISAAC C. WATKINS — 136 Virginia Avenue
Engineer in Experimental Laboratory.

CLARENCE EGBERT — 614 Central Avenue
Supervisor of Printing Department.

Y. M. C. A. GENERAL SECRETARY.

EDWARD LEVERICH HALL, A. B. — Rodes Place

U. S. WEATHER BUREAU.

GEORGE BLEY WURTZ, — 413 East Maxwell
Local Forecaster.

LAYTON THOMPSON — 411 East Maxwell
Clerk.

STANDING COMMITTEES OF THE FACULTY.

Athletics. GILLIS, CURTIS, WEAVER.

Calendar and Bulletins. BOYD, DANTZLER, GILLIS, WEAVER.

Chapel Exercises. MELCHER, DAVIS, MATHEWS, GILBERT.

Commencement Exercises. MRS. STOUT, F. P. ANDERSON, LAFFERTY, UNDERWOOD.

Committee of Deans. DEANS OF THE COLLEGES. PROFESSOR F. P. ANDERSON, Chairman.

Discipline. MATHEWS, UNDERWOOD, HOOPER, D. TERRELL, MAXSON.

Entertainments—Non-Athletics. ZEMBROD, HAMILTON, UNDERWOOD, SWEENY.

Entrance and Accredited Relations. RHOADS, NOE, JONES.

Examinations and Daily Schedule. MELCHER, FREEMAN, BOYD, DANTZLER.

Graduate School. MACKENZIE, CHALKLEY, FRANKEL, TUTHILL, TUTTLE.

Library. G. TERRELL, TUTTLE, TUTHILL, HAMILTON.

Lyceum Lecture Course. FARQUHAR, UNDERWOOD, W. L. ANDERSON

Military. UNDERWOOD, FREEMAN, MAXSON, KILLEBREW.

Music. HAMILTON, ZEMBROD, SWEENY, MUTCHLER.

Oratory and Debate. NOE. CHALKLEY, FARQUHAR, WEAVER.

Student Organizations. PRYOR, JONES, CARREL, W. L. ANDERSON, HAMILTON.

Student Publications. FARQUHAR, ALLEN, BOHANNAN, PENCE.

Student Welfare. TIGERT, BRUMAGE, WEBB, REES, NOLLAU.

Y. M. C. A. MELCHER, ROBERTS, BRYANT.

The President is ex-officio member of all Committees.

Part II.

GENERAL INFORMATION

HISTORY AND EQUIPMENT.

History.

AGRICULTURAL and Mechanical Colleges in the United States owe their origin to an act of Congress, entitled "An Act Donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," approved July 2, 1862. The amount of land donated was 30,000 acres for each representative in the National Congress. Under this allotment Kentucky received 330,000 acres. Several years elapsed before the commonwealth established an Agricultural and Mechanical College under this act. When established it was not placed upon an independent basis, but was made one of the colleges of Kentucky University, now Transylvania University, to which institution the annual interest of the proceeds of the congressional land-grant was to be given for the purpose of carrying on its operations. The land script had meanwhile been sold for fifty cents per acre, and the amount received—$165,000—invested in six per cent Kentucky state bonds, of which the state became custodian in trust for the college.

The connection with Kentucky University continued until 1878, when the act of 1865, making it one of the colleges of said University, was repealed; and a commission was appointed to recommend to the Legislature of 1879-80 a plan of organization for an institution, including an agricultural and mechanical college, such as the necessities of the commonwealth required.

The city of Lexington offered to the Commission (which was also authorized to recommend to the General Assembly the place which, all things considered, offered the best and greatest inducements for the future and permanent location of the college) the City Park, containing fifty-two acres of land within the limits of the city, and thirty thousand dollars of city bonds for the erection of the buildings. This offer the county of Fayette supplemented by twenty thousand dollars in county bonds, to be used either for the erection of buildings or for the purchase of land. The offers of Lexington and the county of Fayette were accepted by the General Assembly.

By the act of incorporation and the amendments thereto, constituting

the charter of the Agricultural and Mechanical College of Kentucky, liberal provision is made for educating, free of tuition, the energetic young men and women of the commonwealth whose means are limited. An act of the General Assembly of the Commonwealth of Kentucky approved March 16th, 1908, changed the style and title of the institution from Agricultural and Mechanical College to that of State University, Lexington, Kentucky. The University, with the additional departments which will, from time to time, be opened as the means placed at the disposal of the trustees allow, will, it is hoped, in the not distant future, do a great work in advancing the educational interests of Kentucky. Being entirely undenominational in its character, it appeals with confidence to the people of all creeds and of no creed, and will endeavor, in strict conformity with the requirements of its organic law, to afford equal advantages to all, exclusive privileges to none. The liberality of the commonwealth, in supplementing the inadequate annual income arising from the proceeds of the land script invested in state bonds, has enabled the trustees to begin and carry on, upon a scale commensurate with the wants of our people, the operation of the institution whose management and oversight have been committed to them by the General Assembly of Kentucky.

Scope of Studies.

In the act of Congress making provision for the class of institutions to which the State University belongs, it is declared that "their leading object shall be, without excluding other scientific and classical studies, and including military, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." To the three departments of agriculture, the mechanic arts, and military science, contemplated in the act as indispensable, an experiment station has been added by the United States, and liberal provision has been made for instruction in all branches of science and in the classics, so that this institution is far more than an agricultural and mechanical college, embracing as it does, not merely the three original departments, but many others.

Kentucky Agricultural Experiment Station.

The Agricultural Experiment Station of the State University was established by the Executive Committee of the Board of Trustees in September, 1885, when the department was organized and a Director

appointed. In 1886 the Station was recognized and named by the General Assembly of Kentucky. In 1887 it became the beneficiary of the first annual appropriation of $15,000, under the Hatch Act providing for the establishment of agricultural experiment stations for the states and territories. In 1906 an act of Congress, for the more complete endowment of agricultural experiment stations, known as the Adams Act, appropriated to each state and territory $5,000 for the year ending June 30, 1906, and the same sum with an increase of $2,000 per annum for five years, after which the maximum of $15,000 shall continue without change. In 1912 the Kentucky Legislature voted an appropriation of $50,000 annually for the benefit of the Station.

The work of the Station is directed to two objects: 1. To a constant succession of experiments made by specialists, in order to learn which application of science will insure the best returns from the farm, the garden, the orchard, the vineyard, the stockyard, and the dairy. 2. To the publication of bulletins announcing such results of the experiments as are found to be valuable to the people of Kentucky who seek profit from any of the prime sources of wealth—the soil, the flock and the herd.

The results of experiments have been published in twenty-four annual reports and one hundred and eighty-eight bulletins, and general appreciation of their utility is shown by the fact that, while no bulletins are sent except upon application, the present mailing list of the station contains about eighteen thousand names, and is constantly increasing.

The Station is well equipped as to buildings and apparatus and owns a good experiment farm of 240 acres, conveniently situated. It has a staff of 77 persons engaged in eleven departments of research and in correspondence with other stations and with farmers throughout the State. The Kentucky Agricultural Experiment Station is not only an important adjunct to the University in the education of students for the leading industrial pursuits, but it is also, through its continual diffusion of knowledge to a large proportion of our population, an institution of great usefulness to the commonwealth.

Location.

The State University is located in the former City Park, in the southern part of the city of Lexington and near the Cincinnati Southern Railway. The site is elevated and commands a good view of much of the city and of the surrounding country.

Lexington, now a growing city of forty thousand inhabitants, is in

the heart of the far-famed Blue Grass region, a region distinguished for fertility and healthfulness, wealth and beauty. Numerous schools and churches, an intelligent and refined population, well paved streets, handsome buildings, extensive waterworks and an unsurpassed system of street electric railways, make Lexington attractive as a seat of learning and place of residence, while the splendid stock farms scattered over the large body of fertile country around it afford advantages hardly equaled elsewhere for the student who desires to become familiar with the best breeds of horses, cattle, sheep and swine in America. Moreover, with railroads diverging in seven directions, Lexington is the railroad center in Kentucky and is in direct connection with Louisville, Cincinnati, Maysville, Huntington and Chattanooga, and with more than seventy counties of the commonwealth. And when to the electric railways now in operation to Georgetown, Paris, Versailles, Frankfort, and Nicholasville, those projected to Winchester and Richmond will be added, the hourly trains of these roads will enable students residing near them to attend the University conveniently from their homes.

Grounds.

The campus of the University consists of fifty-two acres of land, located within the corporate limits of Lexington. The South Limestone electric car line extends along the western border of the campus, affording opportunity to reach in a few minutes any part of the city. The campus is laid out in walks, drives and lawns, and is planted with a choice variety of native and exotic trees and shrubs, to which additions are constantly being made. Two and a half acres forming the northeast portion of the campus, enclosed and provided with grand-stands, are devoted to the field sports of the students.

About three-quarters of a mile south of the campus, on the Nicholasville pike, is the Experiment Station farm, consisting of two hundred and forty-three acres. Here the field experiments of the Station are conducted, and students have opportunities to witness tests of varieties of field crops, dairy tests, fertilizer tests, fruit spraying tests; in short, all the scientific experimentation of a thoroughly organized Station. The front of the farm is pasture and orchard. The rear portion is divided off into two one-tenth acre plots, for convenience in making crop tests.

Buildings.

Administration Building—This is a structure of stone and brick, 140x68 feet. It contains the offices of the President, the Registrar, the

Business Agent, and the local offices of the United States Weather Bureau of the department of agriculture, as well as the chapel in which the students and the faculty meet for worship, and in which are held public gatherings and such other meetings as bring together the entire student body. The remaining space in this building is occupied by recitation rooms.

Chemistry Buildings—The Department of Chemistry is housed in two buildings. The Old Experiment Station Building, seventy feet in length by fifty-four feet in width and two stories high, is devoted to advanced work in chemistry. The new building, with its fine lecture hall, recitation rooms and laboratory, is used exclusively for the large classes in general chemistry. It is the first part of a projected larger building.

Mechanical Hall—This building is of native limestone and brick. It is designed to take care of the work in the College of Mechanical and Electrical Engineering. Shops, laboratories, recitation rooms, lecture rooms, drawing rooms and apparatus are provided to give comprehensive training in the science of dynamic engineering.

Science Hall—This building, erected for the departments of natural science, is three stories in height, 96x97 feet in size, of pressed brick and trimmed with Bowling Green stone. The first and second stories are occupied by offices, laboratories and lecture rooms, the latter being equipped with opera chairs, projection lanterns and other suitable furnishings. The third floor is occupied by the College of Law.

Gymnasium and Armory—This structure of pressed brick and Bedford stone, 100x157 feet, with the central part three stories high, the right wing one and the left two, stands north of the Administration Building. The first floor of the central portion contains the Armory, the offices of the Commandant, and the Physical Director for Men. The second floor is occupied by the Y. M. C. A. Hall, and the Trustees' Room. The third floor isdivided into two literary halls for men and the Alumni Hall. All of these rooms are commodious and well adapted to their purposes. In the basement of the left wing are baths, lockers for men, wash stands, closets, and a swimming pool. The second floor, the gymnasium proper, is equipped with first class apparatus. The right wing, Buell Armory, which is 48x96 feet, is used as a drill room during bad weather.

Education Building—This building was erected for the use of the Departments of Education and Home Economics. The structure is of pressed brick and Bedford stone, and the design follows the most approved style of modern school architecture. The first and second floors

contain class-rooms, a department library-room and two offices. The Department of Home Economics occupies the third floor. Three large rooms in the basement are nsed by the printing office.

Library—This building is the gift of Andrew Carnegie. It is located on the court between the Administration Building and the President's House, is fifty-six feet square, two stories high including the tall basement of range-ashlar, is built of pressed brick, and trimmed with terra cotta.

Agricultural Hall—This building, for the erection of which provision was made by the Board of Trustees at their meeting in December 1906, was completed and occupied in the early summer of 1908. It is three stories in height, 45 x 100 feet in size, constructed of pressed brick and Bedford stone and is designed to be a wing of the larger structure which it is expected the College of Agriculture will eventually require.

The basement contains large rooms arranged for farm machinery, general farm mechanics, potting and propagating, and for the heating plant. On the first floor are the office of the Department of Horticulture and Botany, the general and advanced plant laboratories, and a lecture room. On the second floor are the offices for the Departments of Agronomy and Animal Husbandry, three class rooms, and an attractive reading room. The third floor affords space for an Agricultural Museum, an assembly room for the Grange and other agricultural society meetings and exhibitions, and a photographic laboratory with dark rooms. A modern iron-fame laboratory greenhouse for the study of living plants and for experiments is attached to the rear.

Civil Engineering and Physics Building—This building was planned for the technical work of the College of Civil Engineering and the Department of Physics. It is a three story brick structure 79x127 feet, trimmed with cut stone and occupies the highest point on the University campus. It has floor space of about 40,000 square feet and contains offices, lecture-rooms and laboratories to meet the growing needs of the departments for which it was planned.

Mining Engineering Buildings—These consist of two buildings, constructed of pressed brick with oolitic limestone trimmings, set at right angles to each other and separated with a passage-way twenty-five feet wide. The main building is 45x100 feet, two stories high, with basement ten feet high. This is used for class-rooms, reading room, etc., and it also contains the State Geological Museum and the offices of the State Department of Mines, with offices for the Chief Inspector of Mines and the First Assistant Inspector. The second building is 40x80 feet and two

stories high. It is devoted solely to laboratory, work and is one of the largest mining laboratories in the country.

Observatory—The astronomical observatory is located on the south-eastern side of the University campus. It is a substantial brick structure housing an eight inch equatorial refractor and other necessary appliances for observational work.

Dormitories—The two large brick dormitories on the campus afford lodging for men. In the assignment of rooms preference is given to holders of county appointments.

President's Home—The President's home is a commodious two-story brick structure to the east of the Library building.

Commandant's Quarters—The home of the Commandant of the University is a frame cottage near the President's home.

University Commons—A frame building 100 x 40 feet was erected last year on the campus near the old dormitory where meals are furnished to University students at cost.

Patterson Hall—This building, the residence of the women students of the University is a large and handsome three-story brick structure of a hundred and fifty feet front built on a fine site of about three acres fronting two hundred and ten feet on South Limestone street, on which is a line of the City Electric Railway. Within an eighth of a mile of the University on the south, a half mile of the court house, principal hotels and the postoffice on the north, and within easy walking distance of the city churches, Patterson Hall is, for all purposes, admirably located. The building is heated by steam, lighted by electricity and supplied with hydrant and cistern water. It has a front veranda of 14 x 68 feet, wide halls, a wardrobe in every bedroom, and conveniently located bath-rooms. With walks, drives and numerous old forest trees, the spacious front lawn, one of the most beautiful in Lexington, is an inviting place. Ample provision has been made for exercise in the rear lawn, on which are tennis courts and croquet grounds. The gymnasium for women is also contained in the building.

Hospital Building—The Hospital is a story and a half brick building of six rooms, located on South Limestone adjoining the Campus. It is under the supervision of the Inspector of Dormitories.

Experiment Station Building—This handsome structure is located on South Limestone street, one-fourth of a mile from the campus, and was completed in the winter of 1904. The building is two stories high with a basement and is constructed of pressed brick with oolitic limestone trim-

mings. The foundation is of Kentucky gray limestone faced with broken ashlar oolitic limestone. A large portico, with columns extending from the first floor line to the pediment on a level with the cornice, forms an attractive feature of the building. The cornice is massive, with large brackets. The general design of the building, is colonial, adhering mainly to clsasic proportions. The original building was 114x 60 feet. A large addition to this building, running 92 feet parallel to Washington Avenue and 115 feet parallel to Limestone street, was completed in 1913. This addition provides from forty to fifty additional work rooms and contains 20,700 feet of floor space.

Farm Buildings—The farm buildings include three dwelling houses, a modern and thoroughly equipped dairy barn, a general utility barn, two tobacco barns, two beef cattle barns, a feed house for the storage and study of farm crops, a hog cholera serum laboratory and hyperimmune sheds, a new and commodious conservatory, manure sheds, etc.

Biological Laboratory—The new biological laboratory, hyperimmune sheds and infection cots, all erected out of funds provided for in the act of 1912, were completed in June, 1913. The laboratory is a two-story brick building, with Bedford stone trimmings. The first floor contains a general preparation room, in which the hogs are washed and weighed; a large operating room, where the serum is drawn from the hyperimmunes; an enclosed room for the final bleeding of hyperimmunes; a room for the washing and sterilization of all instruments and utensils; and a room for the final preparation and bottling of serum. The second floor contains an office for the veterinarians in charge and a well equipped pathological and bacteriological laboratory for the study and investigation of the diseases of farm animals. The basement contains two cold storage rooms in which the serum is stored; a room in which to mix the serum; a boxing and shipping room, and a room for the heating plant. The first floor and basement are made of reinforced concrete, and everything is arranged and managed in a sanitary manner. The hyperimmune sheds, consisting of concrete pens, have a capacity of from three to five hundred hogs.

The original biological laboratory has been enlarged and converted into a virus laboratory where all the virulent material is handled This is a frame structure, with concrete floors, divided into four rooms: a preparation room where all animals are washed and prepared for operation; a final bleeding room where all virus animals are bled; a large operating room where immunes are hyperimmunized, and a room for the handling and preparing of virus.

Printing Plant.

The University has recently installed in the basement of the Education Building a complete printing plant which prints all the publications of the University. Employment is given to students under competent instruction.

ADMISSION AND CLASSIFICATION.

Students will be admitted to the University as their previous training warrants. They will be admitted to the Freshman class, to advanced standing, to special courses as special students, or admitted as graduate students.

ADMISSION TO THE FRESHMAN CLASS.

An applicant for admission to the Freshman class of any of the Colleges of the University must offer credit for fifteen units* of high school or other secondary school work, so chosen as to include those prescribed by the particular college he desires to enter. Students who offer thirteen units will be admitted conditionally.

ENTRANCE SUBJECTS.

The units offered for admission to the Freshman class must be taken from the list as given below. The numbers indicate the value in units of each subject.

English	3 to 4	Physical Geography	½ to 4
Algebra	1½	Geology	½ to 1
Plane Geometry	1	Zoology	½ to 1
History	1 to 3½	Psychology or Pedagogy	½
Foreign Languages	2	Political Economy	½
Solid Geometry	½	Agriculture	½
Trigonometry	½	Domestic Science	½
French	1 to 3	Commercial Geography	½
German	1 to 3	Commercial Arithmetic	½
Spanish	1 to 3	Surveying	½
Greek	1 to 3	Bookkeeping	½
Latin	1 to 4	Manual Training	½
Civil Government	½	Drawing	½
Botany	½ to 1	Physiology	½ to 1
Chemistry	½ to 1	Teaching of 6 months or more,	
Physics	1	holding first class certificate	1

*A unit represents a subject pursued five periods a week for one year.

Graduates of first-class High Schools who have had four full years' work in English of five recitations per week may offer four units in English.

No subject offered as an entrance requirement can be counted again in the total credits required for the completion of a college course.

SUBJECTS AND UNITS REQUIRED BY THE SEVERAL COLLEGES.

The following table will show the subjects required for entrance to the several colleges. The elective units indicated must be chosen from the list on the preceding page.

ARTS AND SCIENCE		AGRICULTURE.	CIVIL ENG.	MECH. AND ELEC. ENG.	MINES AND METALL'GY	LAW
A. B.	B. S.					
English. 3	English, 3	English, 3	English, 3	English, 3	English, 3	English, 3
Algebra, 1½	Algebra, 1½	Algebra, 1½	Algebra, 1½	Algebra, 1½	Algebra, 1½	Algebra, 1½
Plane Geometry, 1	Plane Geometry, 1	Plane Geometry, 1	Plane Geometry, 1	Plane Geometry, 1.	Plane Geometry, 1	Plane Geometry, 1
History, 1	History, 1	History, 1.	History, 1	History, 1	History, 1	History, 2
*Foreign Languages, 4	Foreign Languages, 2	Foreign Languages, 2	Foreign Languages, 2	Foreign Languages, 2	Foreign Languages, 2	Foreign Languages, 2
Science, 1	Science, 1	Science. 1	Science, 1	Science, 1	Science, 1	
			Solid Geometry, ½	Solid Geometry, ½	Solid Geometry, ½	
‡Electives, 3½	‡Electives, 5½	‡Electives, 5½	‡Electives, 5	‡Electives, 5	‡Electives, 5	‡Electives, 5½
TOTAL, 15	TOTAL, 15	TOTAL, 15	TOTAL. 15	TOTAL, 15	TOTAL, 15	TOTAL, 15

Students may be admitted to the Freshman class in one of two ways, either on examination or on presenting a certificate from an approved school as described below. Each of these methods is described on the following pages.

ADMISSION BY EXAMINATION.

Examinations for admission will be held at the University on Wednesday, Thursday, Friday and Saturday, September 8-11 inclusive.

All persons who wish to enter the University for the first semester's work, except those whose entrance credits have been accepted by the

*Foreign Languages offered for entrance to the A. B. course must include three years of Latin.

‡No more than two units will be allowed for vocational subjects.

Committee on Entrance, must take these examinations. They will present themselves at the office of the Registrar at 8:00 a. m. of Wednesday, September 8. They will then receive directions concerning the places at which their examinations will be held. For the hours of the examinations, see schedule.

DESCRIPTION OF ENTRANCE UNITS.

English. The units in English are based upon the requirements of the College Entrance Examination board.* English (1) and (2) are both included in the specified entrance requirements and are estimated together as three units. First-class High Schools maintaining a course in the history of literature in addition and whose graduates have the full course with five recitations per week may be allowed four units for entrance in English.

(1) *Reading and Practice—One and one-half units.* Preparation for this part of the work should include the ability to write a paragraph or two on each of the several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to show the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In every case knowledge of the book will be regarded as less important than the ability to write good English. It is important that the candidate shall have been instructed in the fundamental elements of grammar and rhetoric, and shall have been requi.ed to write at least one exercise a week throughout the course of three years. The books prescribed for this part of the preparation are as follows:

(a) (Two to be selected). The Old Testament, comprising at least the chief narrative episode in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther, the Odyssey, with the omission, if desired, of Books I, II, III, IV; V, XV, XVI, XVII; the Iliad, with the omission, if desired, of Books XI. XIII, XIV, XV, XVII, XXI; Virgil's Aeneid. The Odyssey, Iliad, and Aeneid should be read in English translations of recognized literary excellence. For any unit (each unit is set off in semi-colons) of this group a unit from any other group may be substituted.

*For further information in regard to text-books, suitable reading matter for language study, detailed outline of science course and list of laboratory experiments, reference is made to the requirements of this board. A copy of the pamphlet containing the information will be sent free to any teacher upon request. Address: College Entrance Examination Board, Sub-station 84, New York.

(b) (One to be selected). Shakespeare's Merchant of Venice, Midsummer Night's Dream, As You Like It, Twelfth Night, Henry the Fifth, Julius Caesar.

(c) (One to be selected). Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; either Scott's Ivanhoe, or Quentin Durward; Hawthorne's House of Seven Gables; either Dickens' David Copperfield, or Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

(d) (Two to be selected). Bunyan's Pilgrim's Progress, Part I; the Sir Roger de Coverly Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essays on Lord Clive and Warren Hastings; Thackeray's English Humorists; Selections from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's Oregon Trail; either Thoreau's Walden, or Huxley's Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's Inland Voyage, and Travels with a Donkey.

(e) (Two to be selected). Palgrave's Golden Treasury (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's Elegy in a Country Churchyard and Goldsmith's Deserted Village; Coleridge's Ancient Mariner and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and The Prisoner of Chillon; Palgrave's Golden Treasury (First Series), Book IV, with especial attention to Wordsworth, Keats and Shelley; Poe's Raven, and Longfellow's Courtship of Miles Standish and Whittier's Snow-Bound; Macaulay's Lays of Ancient Rome and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette. Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News From Ghent to Aix, Home Thoughts From Abroad, Home Thoughts from the Sea, Incident of the French Camp, Herve Reil, Pheidippides; My LastDuchess, Up at a Villa—Down in the City.

(2) *Study and Practice—One and one-half units.* Preparation for this part of the work includes the thorough study of each of the works named below; a knowledge of the subject matter, form, and structure. In addition, the candidate may be required to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed

works belong. The books set for this part of the work will be as follows:

Shakespeare's Macbeth; Milton's Comus, L'Allegro and Il Penseroso; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address and Webster's First Bunker Hill Oration; either Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

Mathematics. The basis for the determination of units in mathematics must be the quantity and quality of the work done rather than the time element. For the average student, however, four years time will be required to do the work here outlined, Two years should be devoted to algebra, a year to plane geometry and a half year each to solid geometry and plane trigonometry. These subjects may very well be taken in the order named. Some prefer to give one year in algebra, followed by a year in plane geometry; this followed by a return to algebra for a year, the solid geometry and trigonometry coming in the order above indicated. In either plan the use of algebra should be emphasized in the work in geometry. The outline for the four years work follows:

(1) *Algebra—One and one-half units.* The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions, ratio and proportion; linear equations, both numerical and literal, containing one or more unknown quantities; problems depending on linear equations; radicals, including extraction of the square root of polynomials and of numbers; exponents, including the fractional and negative; quadratic equations, both numerical and literal containing one unknown; simultaneous quadratic equations; problems depending upon quadratic equations; the binomial theorem for positive integral exponents, the formulas for the nth term and the sum of the terms of arithmetical and geometrical progressions, with applications.

(2) *Plane Geometry—One unit.* The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and measurement of the circle. The solution of numerous original exercises, including loci problems, application of line and plane surfaces.

(3) *Solid Geometry—One-half unit.* The usual theorems and constructions of good text-books, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle; the solution of numerous original exercises, including loci problems; application to the mensuration of surfaces and solids.

(4) *Trigonometry—One-half unit.* Plane trigonometry should include the definitions and relations of the six trigonometric functions as ratios, the theory of logarithms and the use of tables, the proof of important formulas and considerable practice in trigonometric transformations; the solution of right and oblique triangles.

Latin. For one-half of the reading specified below in any author, equivalents in Nepos, Sallust, Ovid, and other Latin authors, may be offered. In connection with all the reading there should be constant practice in sight translation and prose composition.

The four units that may be offered in Latin are as follows:

(1) *Grammar and Composition—One unit.* The inflections; the simpler rules for composition and derivation of words; syntax of cases and verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive. Translation into Latin of detached sentences and easy continuous prose based upon Caesar and Cicero.

(2) *Caesar—One unit.* Any four books of the Gallic War.

(3) *Cicero—One unit.* Any six orations from the following list, or equivalents: The four orations against Catiline, Archias, the Manilian Law, Marcellus, Roscius, Milo, Sestius, Ligarius. the fourteenth Philippic.

(4) *Virgil—One unit.* The first six books of the Aeneid, and so much prosody as relates to relates to accent, versification in general, and the dactylic hexameter.

Greek. The three units that may be offered in Greek are as follows:

(1) *Grammar and Composition—One unit.* The common forms, idioms, and constructions, and the general grammatical principles of Attic Greek prose. Translation into Greek of detached sentences and very easy continuous prose based upon the Anabasis.

(2) *Xenophon—One unit.* The first four books of the Anabasis. In connection with the reading there should be constant practice in sight translation and prose composition.

(3) *Homer—One unit.* The first three books of the Iliad (omitting II, 494 to end) and the Homeric constructions, forms and prosody. In connection with the reading in Greek there should be constant practice in sight translation and in prose composition.

German. The three units that may be offered in German are as follows:

(1) *First year—One unit.* During the first year the work should comprise: (a) careful drill in pronunciation; (b) the memorizing and frequent repetition of easy colloquial sentences; (c) drill in the rudiments

of grammar—that is upon the inflection of the articles, of such nouns as belong to the language of everyday life, adjectives, pronouns, weak verbs, and the more usual strong verbs; also in the use of the more common prepositions, the simpler uses of the model auxiliaries, and the elementary rules of syntax and word order; (d) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproductlon of natural forms of expression; (e) the reading of from from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

(2) *Second year—One unit.* During the second year the work should comprise: (a) the reading of from 150 to 200 pages of literature in the form of easy stories and plays; (b) accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (c) continued drill in the rudiments of the grammar, directed to the ends of enabling the pupil, first to use his knowledge with facility, in the formation of sentences, and secondly, to state his knowledge correctly, in the technical language of grammar.

(3) *Third year—One unit.* The work should comprise, in addition to the elementary courses, the reading of about 400 pages of moderately difficult prose and poetry, with constant practice in giving, sometimes orally and sometimes in writing, paraphrases, abstracts, or reproductions from memory of selected portions of the matter read; also grammatical drill in the less usual strong verbs, the use of articles, cases, auxiliaries of all kinds, tenses and modes (with special reference to the infinitive and subjunctive), and likewise in word-order and word-formation.

French. The three units that may be offered in French are as follows:

(1) *First year—One unit.* During the first year the work should comprise: (a) careful drill in pronunciation; (b) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles, the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (c) abundant easy exercises, designed not only to fix in memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (d) the reading of from

100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentence read (the teacher giving the English), and in reproducing from memory sentences previously read; (e) writing French from dictation.

(2) *Second year—One unit.* During the second year the work should comprise: (a) the reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches, (b) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (c) frequent abstracts sometimes oral and sometimes written of portions of the texts already read; (d) writing French from dictation; (e) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (f) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

(3) *Third year—One unit.* This should comprise the reading of from to 400 to 600 pages of French of ordinary difficulty, a portion to be in the dramatic form; constant practice in giving French paraphrases, abstracts, or reproduction from memory of selected portions of the matter read; the study of a grammar of moderate completeness; writing from dictation.

Spanish. The two units that may be offered in Spanish are as follows:

(1) *First year—One unit.* During the first year the work should comprise: (a) careful drill in pronunciation; (b) the rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives and pronouns, and elementary rules of syntax; (c) exercises containing illustrations of the principles of grammar; (d) the reading and accurate rendering into good English of 100 to 175 duodecimo pages of graduated texts, with translations into Spanish of easy variations of the sentences read; (e) writing Spanish from dictation.

(2) *Second year—One unit.* During the second year the work should comprise: (a) the reading of from 250 to 400 pages of modern prose from different authors; (b) practice in translating Spanish into English, and English variations of the text into Spanish; (c) continued study of the elements of grammar and syntax; (d) mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses; (e) writing Spanish from dictation; (f) memorizing of easy short poems.

History. Preparation in history will be given credit upon the basis of time devoted to the study of each branch of the subject, rather than upon the amount of ground covered. It is recommended that not less

than one year be given to any of the courses outlined below. The training in history should require comparison and the use of judgment on the pupil's part, rather than the mere use of memory. The use of good text books, collateral reading, practice in writing, and accurate geographical knowledge are essential. General History will not be accepted as an entrance subject.

(1) *Ancient History (to 800 A. D.)—One unit.*
(2) *Mediaeval and Modern History—One unit.*
(3) *English History—One unit.*
(4) *American History and Government—One unit.*

Physics. One unit may be offered. The preparation in physics should include individual laboratory work, comprising at least four exercises, illustrating the different phases of the subject; instruction by lecture; table demonstrations, to be used mainly as a basis for questioning upon the general principles involved; and the study of at least one standard text-book, to the end that the pupil may have gained comprehensive and connected views of the most important facts and laws of elementary physics. Original note-books must be submitted.

Chemistry. One-half to one unit may be offered in this subject. The preparation in chemistry should be conducted upon the same general plan suggested for work in physics. Original note-books must be submitted.

Physical Geography. One-half to one unit may be offered in this subject. The preparation in physical geography should include the study of at least one of the modern text-books, accompanied by field work. Original note-books must be submitted.

Physiology. One-half to one unit may be offered. The preparation in physiology should include a study of the nature of foods and their history in the body; the essential facts of digestion, absorption, circulation, secretion, excretion, and respiration; the motor, nervous, and sensory functions; and the structure of the various organs by which these operations are performed. A note-book with careful outline drawings of the chief structures studied anatomically together with explanations of these drawings, and the study of a good text-book are essential.

Botany. One-half to one unit may be offered. The preparation in botany should include a study of the structure and elementary physiology of the seed plants, ecology, the natural history of the plant groups, and classification. The laboratory method of instruction should be emphasized, but no further than can be done with a simple magnifier. Accurate drawings and concise note-books should be prepared by the student.

Zoology. One-half to one unit may be offered. The preparation in

zoology should be along the same lines as those laid down for botany. It should be such as to render the student familiar with the salient characteristics of each of the animal sub-kingdoms. This can be accomplished only by a laboratory study of at least one type animal under each sub-kingdom.

Geology. One-half to one unit may be offered. The study of geology should include an examination into the causes now in operation as throwing light on those which have operated in the past, followed by a sketch of historical geology. This wlll involve a presentation of the following topics: atmospheric agencies; the work of underground and surface waters; the work of the sea; internal geological agencies, such as volcanic activity, earthquakes, and slow movements of the earth's crust; structural geology, or the study of rock forms; and finally physiographic geology, or the interpretation of land forms in the light of their geological history. The text should be supplemented by an examination of rocks, minerals, fossils and by field work, and the pupil should record his observations in a note book.

Drawing. One-half to one unit may be offered. The student should be able to show ability to sketch free-hand geometrical figures, such as circles, spirals, polygons, pyramids and cylinders; also common objects, such as chairs, tables, animals, bones, flowers. He should be able to copy, by enlarging or reducing its dimensions, the picture of any ordinary object.

Bookkeeping. One-half unit may be offered. A full term's course must be taken in this subject with recitations five times a week. When a commercial course is given and more time required for this subject an additional half unit may be allowed.

Vocational Subjects. The subjects of Manual Training, Domestic Science, Agriculture, Commercial Geography, Commercial Arithmetic, may be valued at one unit each when the work done in each is equivalent to a full term of eighteen or twenty weeks with five full recitations. If subjects are given once or twice a week only, not less than ninety hours may be offered. The work in each subject should include a regular text-book course and this should be directed toward practical application and use.

ADMISSION BY CERTIFICATE.

Persons who desire to enter the University by certificate instead of by examination must have their credits certified by the Superintendent or Principal of the school in which they may be secured. Blank forms for such certificates, will be furnished by the Registrar of the University

on application. These certificates should be properly made out, signed, and should be mailed to the Registrar as early as possible and not later than September 1. Only graduates of accredited schools or those who have completed the accredited course, will be admitted upon certificate. A diploma, such as is given at graduation to high school pupils, cannot be substituted for this certificate.

ACCREDITED SCHOOLS.

Schools, whether public or private, may be accredited, provided they meet the following requirements :

High schools and other schools doing preparatory work now on the accredited list and that may hereafter be placed thereon may be designated by two forms of classification. The first division, or *Class A*, may include all schools which meet the following requirements:

A four-year course of study, requiring fifteen college entrance units for graduation; three qualified teachers devoting all their time to high school work; a minimum of forty minutes to each recitation ; a school year not less than thirty-six weeks ; a sufficient equipment to properly teach the subjects offered ; a progressive school spirit and sentiment ; classes not too large for good work and whose work is recognized as satisfactory.

The second division, or *Class B*, may include those schools which are lacking in one or more of the above requirements and which offer thirteen or more units for graduation and whose work is considered satisfactory, provided that no school shall be admitted to this class which does not have two qualified teachers devoting full time to high school work, with an equipment sufficient to properly teach the subjects offered, and time given to each recitation sufficient in which satisfactory class work can be accomplished.

These lists will be prepared and revised by the Committee on Accredited Schools, Association of Kentucky Colleges, at stated periods and it will employ all sources of information as to the extent and character of the courses offered by the schools. In every instance a recommendation from the Professor of Secondary Education, who acts as Inspector of Schools, will be required.

A school applying for admission to either accredited list is required to submit an agreement, signed by its Board of Education or other controlling body, that its course of study will not be changed so as to reduce the number of units offered without notification to the Chairman of the Committee.

ACCREDITED PUBLIC HIGH SCHOOLS.

Class A.

LOCATION.	NAME OF SCHOOL.	SUPT. OR PRIN.
Ashland	High School	J. W. Brander.
Auburn	County High School	J. D. Speers.
Augusta	High School	A. J. Jolly.
Bellevue	High School	W. P. King.
Bowling Green	W. Ky. Normal	H. H. Cherry.
Bowling Green	High School	J. E. Sigler.
Carrollton	High School	W. F. O'Donnell,
Central City	High School	J. R. Kirk.
Catlettsburg	High School	J. O. Faulkner.
Covington	High School	H. O. Sluss.
Cynthiana	High School	R. I. Cord.
Dawson Springs	High School	J. C. Jenkins,
Dayton	High School	L. N. Taylor.
Elizabethtown	Hardin Co. High School	R. Y. Maxey.
Falmouth	High School	G. H. Wells.
Flemingsburg	High School	Edmond Wroe.
Frankfort	High School	H. C. McKee.
Franklin	High School	J. V. Chapman.
Fulton	High School	J. C. Cheek.
Georgetown	High School	J. C. Waller
Glasgow	High School	E. B. Terry.
Greenville	High School	C. C. Haydon.
Hardinsburg	County High School	T. S. Williams.
Harrodsburg	High School	J. G. Prather.
Hartford	High School	H. E. Brown.
Henderson	High School	Arkley Wright.
Hopkinsville	High School	W. E. Gray.
LaGrange	High School	W. L. Dawson.
Lancaster	High School	W. L. Caneer.
Lawrenceburg	High School (county)	Mrs. R. Kavanaugh.
Lawrenceburg	City High School	I. C. Reubelt.
Lebanon	High School	J. R. Sterritt.
Lexington	High School	M. A. Cassidy.
Louisa	High School	W. M. Byington.
Louisville	Girls High School	O. L. Reid.
Louisville	Male High School	S. B. Tinsley.
Louisville	Manual Training H. S.	E. P. Chapin.

LOCATION.	NAME OF SCHOOL.	SUPT. OR PRIN.
Ludlow	High School	W. D. Reynolds.
Madisonville	High School	R. H. Gatton.
Mayfield	High School	M. M. Fanghender.
Maysville	High School	W. J. Caplinger.
Mt. Sterling	High School	W. O. Hopper.
Morganfield	High School	R. A. Edwards.
Murray	High School	J. W. Jones.
Newport	High School	W. P. King.
Nicholasville	High School	W. G. Hart.
Owensboro	High School	J. H. Risley.
Owenton	High School	B. L. Vallandingham.
Paducah	High School	J. H. Bentley.
Paris	High School	T. A. Hendrix.
Princeton	High School	J. M. Calvin.
Richmond	Caldwell High School	D. W. Bridges.
Richmond	Model High School	J. H. Hoskinson.
Richmond	Eastern Kentucky Normal	J. G. Crabbe.
Shelbyville	High School	T. H. Houston.
Somerset	High School	J. W. P. Brouse.
Stanford	High School	W. C. Wilson.
Sturgis	High School	C. C. Justus.
Walton	High School	J. L Chambers.
Winchester	High School	E. F. Darnaby.

Class B.

Alexandria	County High School	Cynthia E. Riley.
Arlington	High School	Elmer Tarter.
Bardstown	High School	P. H. Neblett.
Beaver Dam	Western Ky. Seminary	J. L. Stilwell.
Bedford	Trimble County H. S.	John Howard Payne.
Benton	High School	G. E. Everett.
Brooksville	High School	Louella Shaffer.
Burlington	County High School	——Caywood.
Butler	High School	H. G. DeLong.
Cadiz	High School	N. D. Bryant.
Carlisle	High School	R. D. Squires.
Clinton	County High School	H. W. Puckett.
Cloverport	High School	W. H. McCoy.
Columbia	High School	W. M. Wilson

LOCATION.	NAME OF SCHOOL.	SUPT. OR PRIN.
Corydon	High School	L. H. Gehman.
Danville	High School	J. A. Carnagey.
Dixon	High School	S. G. Boyd.
Earlington	High School	C. E. Dudley.
Elkton	High School	E. B. Weathers, Jr.
Eminence	High School	J. B. Sibley.
Erlanger	High School	P. L. Hamlett.
Fordsville	High School	Fred Shultz.
Ft. Thomas	Highlands High School	F. A. Cosgrove.
Grayson	High School	J. W. Lusby.
Guthrie	High School	J. R. Claypool.
Heath	County High School	J. S. Ragsdale.
Hickman	High School	B. F. Gabby.
Hodgenville	High School	R. H. Shipp.
Horse Cave	High School	T. H. Napier.
Junction City	High School	E. L. Grubbs.
LaCenter	County High School	W. H. Sugg.
Leitchfield	High School	T. A. Humble.
Little Rock	Graded High School	Byron M. Roberts.
Livermore	High School	W. L. Mathews.
Marion	High School	J. T. Christian.
Mayslick	County High School	E. L. Dix
Middlesboro	High School	M. O. Winfrey.
Midway	High School	W. R. Chandler.
Minerva	County High School	J. A. Caldwell.
Monticello	High School	C. O. Ryan.
Morgantown	High School	O. J. Jones.
Munfordsville	High School	Edgar Sanders.
New Castle	High School	L. S. Rhoades.
Pembroke	High School	B. F. Brown.
Pineville	High School	B. W. Sherrill.
Providence	High School	C. C. Miller.
Sebree	High School	Oscar Shemwell.
Smith's Grove	County High School	T. B. Cutton.
Springfield	High School	G. C. Colvin.
St. Helens	High School	Mrs. Silva W. Russell.
Tomkinsville	High School	Claude Shultz.
Uniontown	County High School	J. S. Singleton.
Utica	County High School	Warren Payton.
Vanceburg	County High School	Mabel Pollitt.

LOCATION.	NAME OF SCHOOL.	SUPT. OR PRIN.
Versailles	High School	R. G. Lowrey.
Vine Grove	High School	G. L. Crume.
Warsaw	High School	C. S. Joseph.
West Liberty	High School	H. C. Wilson.
West Point	High School	W. H. Sprigg.
Whitesville	County High School	E. L. Hawkins.
Williamstown	High School	Henry Newton.
Wingo	High School	E. H. Smith.
Wickliffe	High School	H. E. Knarr.

ACCREDITED PRIVATE INSTITUTIONS.

Class A.

Barboursville	Union College	E. R. Overly.
Clinton	Marvin Univ. School	A. J. Smith.
Columbia	Lindsey-Wilson	P. G. Chandler.
Georgetown	Cardome Academy	Mother Mary Agatha
Glasgow	Liberty College	M. W. Hatton.
Lexington	Hamilton College	E. W. McDiarmid.
Lexington	Sayre College	J. M. Spencer.
London	Sue Bennet Memorial	J. C. Lewis.
Lyndon	Ky. Military Institute	Col. C. W. Fowler.
Louisville	Semple Collegiate School	Miss Lucy Baird.
Louisville	Training School	W. H. Pritchett.
Louisville	University School	W. H. Tharp.
Louisville	St. Xavier	Brother James.
Millersburg	Female College	Rev. C. C. Fisher.
Millersburg	Military Institute	Col. C. M. Best.
Midway	Ky. Female Orphan School	Ella Johnson.
Nazareth	Nazareth Academy	Sister M. Ignatius.
Newport	Acad. Notre Dame of Prov.	Mother Maria.
Owensboro	Owensboro College	J. B. Larue.
Paintsville	Sandy Valley Seminary	P. S. Murrell.
Pikeville	Pikeville Academy	G. P. Whitehouse.
Russellville	Bethel College, Prep.	H. G. Brownell.
Shelbyville	Science Hill	Mrs. W. T. Poynter.
Stanton	Stanton College	J. C. Hanley.
Versailles	Margaret College	Jas. M. Maxon.
Williamsburg	Cumberland College	E. E. Wood.
Wilmore	Asbury College Academy	S. A. Arnold.

Class B.

LOCATION.	NAME OF SCHOOL.	SUPT. OR PRIN.
Campbellsburg	High School	J. W. Pearcy.
Elkton	Vanderbilt Training	Matheny-Batts.
Franklin	Training School	H. W. Browder.
Frenchburg	High School	A. G. Weidler.
Hazel Green	Hazel Green Academy	J. T. McGarvey.
Hindman	W. C. T. U. School	Miss Willie A. Gould.
Inez	Wilson Mem. Academy	J. C. Kelley.
Lexingon	Williams Prep. Academy	Miss Ella M. Williams.
Louisville	Holy Rosary Academy	Sister Mary Rose.
Nicholasville	Boys School	T. B. Threlkeld.
Oneida	Baptist Institute	J. H. Walker.
Versailles	Rose Hill Academy	M. G. Jesse.

ADMISSION TO ADVANCED STANDING.

Candidates who can present equivalents of any part of the college work may secure advanced standing and thereby reduce the number of hours required for graduation. They may secure this advanced standing by one of two methods:

a—By examination on each subject for which credit is desired.

b—By transfer from a college or university, or by credits satisfactory to the committee on advanced standing. An official statement must be submitted to this committee certifying in detail the work for which credit is desired.

ADMISSION AS SPECIAL STUDENTS.

A graduate of another university or college may enter the University to pursue any special work. Other persons may be admitted as special students under the following conditions:

a—They must be at least twenty years of age.

b—They must show the Committee on Entrance good reason for not taking a regular course.

County appointees are required by the terms of appointment to do full work in a regular course of study and cannot, therefore, be admitted as special students.

ADMISSION AS GRADUATE STUDENTS.

The graduate school is open to students, without distinction of sex, who are graduates of this or any other university or college of recognized

standing. In exceptional cases, other persons of proper age and attainments may be admitted as students. Application for admission to this school should be made to the Dean of the Graduate School, and should be accompanied by official certificates attesting the candidate's completion of an undergraduate course.

For further information see statement of the graduate school.

RESIDENCE AND GRADUATION.

University Sessions.

The session of the University begins on the 13th of September, 1915, and ends on the 8th of June, 1916. It is divided into two semesters. The first semester ends on 29th of January, 1916; the second semester begins on the 1st of February and ends on the 8th of June, 1916. The summer term begins on the 13th of June and ends on the 21st of July, 1916.

Entrance Examinations.

Entrance examinations will be held the week preceding the opening of the first semester and on two other dates arranged by the Entrance Committee. See the schedule in the first part of the catalog.

Registration.

Students are required to register in person, as follows: In 1915-16, they will register for the first semester on September 13 and 14; for the second semester on February 1. The registration will be conducted in the Armory. The student will present himself at the office of the Registrar, Here he fills out the cards given him, signs the registration book, then goes to the business agent to whom he makes payment of his fees. He will then return to the Registrar, and if he is a new student who has offered no entrance credits which have previously been accepted, he will be sent to the Entrance Committee which will pass on any credits he may offer. If he has none, he will be instructed concerning time and place of examinations. Students whose credits have been accepted will be directed to the respective Deans of the Colleges they desire to enter who will fill out courses of study and assign to classes.

Students who do not register on the appointed days must wait until a later time that shall be designated by the Registrar.

Late Registration.

A registration fee of $5.00 will be charged for all students entering the University after the regular registration period.

Changes in Registration.

Ten days after the beginning of the Fall Term, a fee of $2.00 will be charged for transfer from one college or school to another. After the

same time, a fee of fifty cents will be required for any other alternation in the course of study, except in the case of the dropping of a subject upon the advice of the Dean. This charge will also be made five days after the opening the second semester.

Fees.

Each student will be required to pay an *incidental fee* of $15. Students will be furnished with free admission to all public lectures given under the auspices of the Public Lecture Bureau, to the use of the University hospital, and free admission to all athletic contests and exercises given under the auspices of the University Athletic Association. Students not residing in the State will pay an additional fee of $5.00. Students entering the second semester will pay one-half the above fees.

Students who hold county appointments and who occupy rooms in the dormitories upon the campus, each pay a fee of $10.00 to cover use of furniture, service of matron, service of janitor, medical inspection and benefits of the University hospital.

No student will be entitled to expenses of transporation for more than one round trip to and from the University each year, and then only upon the condition that he remain for the full period of the school year.

A diploma fee of $5.00 is charged.

A fee of $1.00 will be charged for the failure of any student to complete and file with the Registrar his second semester classification before the close of the first semester.

A conditioned student must pay a fee of $1.00 per semester for each condition carried over from the previous year.

A fee of $5.00 will be charged for admission to entrance examinations after the regular examination period.

All students who have not upon the record of the college, credit in full for all entrance work, will be charged a fee of $5.00 a semester.

A fee of $1.00 will be charged for a special examination.

For fees for late registration and charges in registration, see above.

Credits.

In order to be eligible for graduation a candidate must have completed the required credits of work. A credit consists of class work one hour a week for thirty-six weeks.

Students will be graded in their work by letters as follows:

A. Excellent.
B. Good.
C. Pass.
D. Conditioned.
E. Failure.

Reports to Parents.

Written examinations are held in all classes at the close of the first and second semesters. Reports are sent at these times to the parent or guardian of each student to indicate as nearly as possible the quantity and quality of work done. In addition to these, mid semester reports are made of those who are doing unsatisfactory work. Special reports are sent on request at any time.

Rules of Classification.

1. No student will be considered as belonging to a given class unless a majority of his studies are in that class or a higher class.
2. A student may be permitted by his Dean to register for studies not more than one year in advance of his classification.
3. A student with more than two conditions or failures will not be considered as a member of a higher class.

Conditions and Failures.

A Condition may be removed by passing an examination either regular or special. A condition not thus removed becomes a failure. If a student does not pass the examination which he enters, the condition becomes a failure.

A Failure may be removed only by taking the subject again in class This must be done as soon as the subject recurs in the University schedule; and studies in which a student has failed or is deficient take precedence of all others in the arrangement of his course.

Examinations for Removal of Conditions.

Regular Examinations for the removal of conditions will be held the week preceding the opening of the first semester, three weeks before the close of the first semester, three weeks before the close of the second semester.

Special Examinations may be taken at other times agreed upon by the Registrar and the head of department concerned. A fee of $1.00 is charged.

Dropping of Delinquent Students.

Any student, who, at any time, is found delinquent in one-third of his work (estimating the same on the number of credit hours he is carrying), shall be placed upon probation for so much time as may be necessary for him to remove his delinquencies.

Any student, who, at the end of any semester, shall be found delinquent in one-half of his work (estimated upon the same basis as the foregoing), shall be automatically dropped from the rolls of the University. Such "dropped" students may not be re-instated except upon permission of the special faculty of the college in which he is a matriculate. In making such application the student shall appear in person before such faculty.

Any student placed upon probation shall be ineligible during that period to represent the institution in any form of public contest or exercise, such as membership of any athletic team, glee club, or dramatic association would involve, nor may he serve during that time as a member of the editorial or managing staff of any college publication, unless he is pursuing a course in Journalism; in which case he may be assigned to reportorial duties by the head of the Department of Journalism.

A student placed on probation, who shall fail to give such evidence of improved scholarship as to warrant the belief that he will, by the close of the semester, not have accumulated more conditions or failures than he already has, shall be dropped from the rolls of the University, subject to re-instatement as in the former instance.

Rule Relating to Deficiencies in English.

Any instructor who finds the written work of any student seriously defective in its English is expected to report the case, together with specimen papers, to a committee consisting of the Dean and the Professor of English, who shall have power to require additional work in composition without credit.

Irregular Class Attendance.

When a student becomes irregular in any class or classes, the Registrar may suspend him from all classes until he has made satisfactory explanation to his Dean.

General Conduct.

In issuing rules for the government of the students, it is not deemed necessary to set forth too many details. Something is taken for granted. It is assumed that the students will conduct themselves in a seemly manner, bearing in mind that their conduct constitutes the basis for the reputation of the institution. It is assumed that the young men understand that intoxication, the visiting of saloons, the introduction of intoxicants upon the campus, gambling in any form, or the visiting of

any place of vice is strictly prohibited. It is assumed that all students know that the penalty for immoral or ungentlemanly conduct is suspension or dismissal.

Hazing.

All forms of interference with a student's personal liberty by other students, such as is commonly classed under hazing, and complicity in any form of initiation which has incident thereto the exhibition of a student as a public spectacle in a ridiculous light or the treatment of him publicly or privately, even with his consent, in such a way as to endanger life or limb, are forbidden in this institution.

Smoking in University Buildings.

Students are prohibited from smoking in any of the recitation rooms, Y. M. C. A. rooms, Armory, Gymnasium, Drawing Rooms, Hallways, Doorways, or Laboratories of the University.

Residence in Sorority Buildings.

Freshmen and Sophomores are not allowed to reside in Sorority houses. Juniors and Seniors must obtain permission from the Dean of Women for such residence.

Expenses.

The necessary expenses, in addition to fees, will be about as follows:

Laundry	$10.00
Books	10.00
Rent of furnished room per week $1.00 to	1.50
Board in Clubs, per week $2.25 to	2.75
Board in private families per week $3.00 to	3.50
Board and lodging in private families per week, $3.50 to	4.50

Students who are required to do military drill must procure the regulation uniform, which will cost about $15.00.

Board and lodging are provided in Patterson Hall for young women at $3.50 per week. The occupants furnish their own napkins, towels and bedding, except mattresses and pillows, and pay their own laundry bills. Board is furnished to men at the University Commons at cost.

Employment Bureau.

Many students find it necessary to earn money with which to help to support themselves while in college. An employment bureau has been organized for the purpose of aiding them in securing work.

If a student desires to employ part of his time to earn money, he reports to the bureau the number of hours he can work. Many good positions have been secured for the students in this way. There are about fifty various newspaper routes in the city; all of them are carried by college men. The state farm, which is a part of the University, employs many students. If the prospective student has only one or two hours each day for working, it is so arranged by the farm managers that he is always employed. A number of students wait on tables at the boarding houses for their board. The merchants and tailoring establishments of the city employ students to carry bundles. Young men are employed at hotels and restaurants and other work at numerous odd jobs at the home of the citizens. Some of the buildings of the University are cared for by students. A number of the young men are employed as stenographers in the city. It is an easy matter for any young man to support himself at this school. Any student seeking employment can get aid by applying at the office of the Y. M. C. A.

Dormitories for Men.

Young men may reside in the dormitories on the University campus, or in private houses approved by the faculty. The dormitories afford lodging for about two hundred students. County appointees are supplied with rooms first, then other students in order of application. The occupants of the rooms are required to keep them in order. The janitors attend to the halls and the removal of rubbish. The matron has her office in the *new dormitory* and inspects each room of both buildings regularly. If a student is sick, the fact is reported to the medical officer. The medical officer inspects each room regularly as to its cleanliness and general hygienic conditions.

Dormitory for Women.

Patterson Hall, the young women's university home, is under the immediate direction and management of the Dean of Women. The Hall contains sixty-eight commodious and well furnished rooms, affording accommodation for one hundred and twenty-four persons, for whom excellent board and lodging are furnished at $3.50 per week, the occupants furnishing their own napkins, towels, and bedding, except mattresses and pillows, and paying for their own laundry. The Department of domestic science will co-operate in arranging the dietary.

Student Advisers.

For Men.—The Deans of the various colleges will select for each

man upon matriculating in their college one member of the Faculty who shall assume toward that student the relation of student adviser. He advises the student in all matters and looks after his general welfare; he endeavors especially to direct the student's social and moral life. The student is made to feel that the University is interested in him personally, and that it wishes to make him a useful member of the university community and of society. The advisers are under the direction of the President.

For Women.—All young women are under the supervision of the Dean of Women.

University Hospital.

The University maintains a building near the campus, known as the University Hospital. Here provision is made for students who are ill, and who need special medical attention. It is near the city hospital where the University also maintains a ward for students who may need the constant services of a trained nurse.

Convocation.

Religious exercises are conducted in the Chapel every Wednesday morning under the direction of the Chapel Committee. The ministers of the various churches of Lexington address the students at these gatherings and music is furnished by the best talent of the city and student body.

Churches in Lexington.

The churches of Lexington extend to all the University students a cordial invitation to enter into Christian fellowship with them. They welcome all students to their services irrespective of church relationship. Frequent receptions by the young peoples' associations of the various churches are given for the University students. The pastors visit the University, preach special sermons for students, and are glad to welcome them in their homes. Each church has a Bible class especially for students, usually conducted by a University professor.

Recommendation of Teachers.

The State University strives to secure appointments for its graduates in the schools and academies of the State and elsewhere. To this end it keeps on file the names of all former students so that it may be able at any time to assist them to positions, and be of service to the High Schools of the State. The demand for State University graduates is constantly increasing. The institution will be glad to receive any information concerning vacancies.

University Woman's Club.

The Woman's Club, consisting of the professors' wives and other ladies of the University, exerts a most helpful influence upon the social and moral life of the community. Entertainments are given under their auspices. During the past year they were very active in looking after the sick and needy among the students. They welcome students in their homes.

Lyceum Course.

The University conducts annually a lyceum course, which gives the students opportunity to hear at small cost the foremost lecturers and artists. During the past year these lectures were attended with increased interest and were a source of great pleasure and profit.

The Library.

The University Library embraces all the books belonging to the colleges and schools of the University. These consist of the general library, and Law library, the Experiment Station library, and the various department libraries. The total number of volumes is 28,186, divided as follows:

General library (working collection)	7,760 vols.
(public documents)	3,000 "
Law library	5,000 "
Experiment Station library	6,500 "
Agricultural College library	1,426 "
The Engineering libraries	1,550 "
Chemistry library	450 "
Arts and Science (in various departments)	2,500 "

Books may be taken out by all officers and students of the University, by teachers in the public schools, and by others having special permission. The whole collection is placed upon shelves accessible to all readers. The reading room for general use will seat 75 persons.

The books and magazines on mathematics and astronomy have been placed in the mathematics seminary room in the basement of the library building.

Two hundred periodicals are regularly received by the library.

Library Hours. The general library is open every week-day, (legal holidays excepted), from 8 a. m., to 5:30 p. m., and from 7 to 9:30 p. m. On Sundays it is open from 2 to 5 p. m. During the Christmas vacation it is open from 9 to 12 a. m., daily.

The Experiment Station library, consisting of 6,500 volumes, is an

independent but closely allied organization, and affords ample material for the research student in agriculture, chemistry and allied subjects. This library has depository catalogues of the publications of the U. S. Department of Agriculture and the Experiment Stations of the United States. Two hundred and twenty-five periodicals are currently received. Hours of opening are 8 to 5 daily except Saturday.

Residence Requirement for the Bachelor's Degree.

To be eligible for the Bachelor's degree the candidate must have been a resident student of the University during at least one year's session.

Senior Classification.

In order to be considered a member of the Senior class of any year, eligible to graduate in June of that year, a student must at the beginning of the college year in September have completed at least 51 credits.

Commencement Honors.

The honor students who have been selected by their Deans are given special mention upon the Commencement program.

Degrees.

The following degrees will be conferred upon undergraduates who have completed the work as prescribed in the various colleges:

Bachelor of Arts (A.B,)
Bachelor of Science (B.S.)
Bachelor of Science in Agriculture (B.S.Agr.)
Bachelor of Science in Home Economics (B.S. in H.E.)
Bachelor of Laws (LL. B.)
Bachelor of Civil Engineering (B.C.E.)
Bachelor of Mechanical Engineering (B.M.E.)
Bachelor of Mining Engineering (B.E.M.)
Bachelor of Metallurgical Engineering (B. Met. E.)

The following advanced degrees are conferred in the Graduate School:

Master of Arts (A.M.)
Master of Science (M.S.)
Master of Science in Agriculture (M.S. Agr.)
Civil Engineer (C.E.)
Mechanical Engineer (M.E.)
Electrical Engineer (E.E.)
Mining Engineer (M.E.)
Doctor of Philosphy (Ph. D.)

For further information concerning advanced degrees, see statement of the Graduate School.

SCHOLARSHIPS AND PRIZES.

County Appointees.

Each county in the State is entitled to select and send to the State University one or more properly prepared students, free of charge for tuition, martriculation and gymnasium fees, as follows:

Each county is entitled to make two appointments each year for 4,500 white pupils or less within the common school age, based upon the last official census preceding said appointment, and for each 3,000 white pupils over 4,500, is entitled to make one additional appointment.

County appointments exempt appointees from payment of tuition fees and provide traveling expenses to those marticulated in any regular course of study which leads to a degree in the University. Appointments are all valid for the term of years necessary to complete the course of study in which the appointee marticulates.

Beneficiaries are appointed on competitive examination. A Board of Examiners is appointed for this purpose by the county superintendent of common schools. The results of examinations are reported to the superintendent, who from the data thus furnished selects the appointees. Examinations are made upon subjects transmitted to the county superintendents by the faculty of the University.

Appointments are made by the county superintendent between the first day of June and the first day of September of each year. Blanks for these appointments are furnished by the Registrar of the University.

Appointees who are graduates of accredited schools are admitted without examination; other students are admitted by examination.

Southern Railway Scholarship.

The Southern Railway offers a cash prize of $1,000 to be awarded in the College of Agriculture. The beneficiary must, after graduation, devote himself to the pursuit of agriculture for three years at some point along the line of the Southern Railway. The beneficiary is appointed by the President of the University. The money is available in four installments, the first payment being made at the beginning of the Freshman year.

Tau Beta Pi Scholarship.

The Tau Beta Pi Society offers a cash prize of $100 to the student of

the Engineering Colleges who attains the highest scholarship during the Freshman and Sophomore years. The prize is available at the beginning of the Junior year.

Japanese Society Prize.

Through the munificence of Mr. Henry Clews, the Japanese Society of New York has donated the sum of $75 to be awarded in sums of $50 and $25 respectively for the best two essays on some subject relating to Japan. Aspirants for these prizes must be students of the University. The essays are to be typewritten and must be submitted under an assumed name not later than April 15.

Bennett Prize.

Pursuant to the will of the late Mr. Bennett of New York, a cash prize of $20 in gold is offered to the student of the University who shall submit the best paper on some topic relating to the Origin and Development of Parliamentary Institutions. This prize is awarded in May.

Barker Trophy.

President Barker has given the Union and Patterson Literary Societies a $50 silver cup, for the possession of which they compete in annual debate. The successful Society in this contest retains custody of the cup until the next debate.

Barker Prize for the Union Society.

President Barker offers a cash prize of $25 to the Union Society upon conditions to be imposed by the Society.

Barker Prize for the Patterson Society.

President Barker offers a cash prize of $25 to the Patterson Society upon conditions to be imposed by the Society.

Barker Prize for the Philosophian Society.

President Barker offers a cash prize of $25 to the Philosophian Society upon conditions to be imposed by the Society.

Barker Prize for the Horace Mann Society.

President Barker offers a cash Prize of $25 to the Horace Mann Society upon conditions to be imposed by the Society.

Crum Prize.

By kindness of Mr. Geo. W. Crum a medal valued at $20 is offered annually to the Patterson Society. The conditions are imposed by the Society and the medal awarded before the Christmas holidays.

Patterson Prize.

Ex-President James K. Patterson offers to the Patterson Society a medal to be awarded annually on March 26, upon conditions imposed by the Society.

Oratorical Prize.

The Union Society offers a $15 gold medal to the successful competitor in an oratorical contest. This contest occurs on February 22 in the University chapel.

Declamation Prize.

A $10 gold medal is offered annually, by the Union Society, to the successful contestant in declamation. This is open to all members of the Society.

The American Law Book Company Prize.

The American Law Book Co., of New York, offers as a prize to the law student who makes the best general average during the year a set of Student's Edition of CYC in twelve volumes, which set is a reproduction of the text of the forty volume edition of CYC.

Callaghan & Company Prize.

Callaghan & Company, Law Book Publishers, of Chicago, offer as a prize to the law student of the Junior year who makes the best general average a Cyclopedic Law Dictionary.

John B. Atkinson Prize.

A prize of $10 in gold is offered, in memory of John B. Atkinson, to that student of the College of Mines and Metallurgy who shall attain the highest scholarship during the academic year. This prize is awarded at Commencement.

Military Prizes.

A cash prize of $65 will be awarded to the best drilled company.

$5 medals will be awarded to the best drilled individual cadets in the Freshman and Sophomore classes respectively.

These prizes will be awarded at the annual Spring Competition.

National Municipal League Prize.

The National Municipal League offers an annual prize of $100 to be given to the author of the best essay on a subject connected with municipal government. The contest is open to all undergraduate students in American colleges. For details concerning the scope and condition of the competition inquiries may be addressed to the Head of the Department of History.

Commissioner of Agriculture Prizes.

The State Commissioner of Agriculture has provided prizes aggregating $125 for the best judging of the various classes of live stock to be competed for annually by students of the College of Agriculture, at the Kentucky State Fair at Louisville.

A. S. H. B. Association Trophy.

The American Saddle Horse Breeders Association offers at the State Fair each year a handsome silver trophy to be given to the best student judge of saddle horses at the Fair.

Ewing Prize.

For the best judging of dairy cattle by students of the Freshman class of the College of Agriculture, Messrs. D. H. Ewing's Sons, of Louisville, donate an annual prize of $25 to be competed for at the Kentucky State Fair.

Bowles Prize.

For the best judging of dairy cattle by a student of the Freshmen class of the College of Agriculture, Hon. J. B. Bowles of Bardstown, Kentucky, offers an annual prize of $25.

National Dairy Show Trophies and Scholarships.

During the past three years students of the Department of Animal Husbandry in the College of Agriculture have competed at the National Dairy Show at Chicago for the handsome trophies offered for the best judging of dairy cattle by students of state agricultural colleges. These trophies are as follows:

A. Sweepstakes trophy offered by the National Dairy Show Association for the agricultural college team making the highest average score in judging cattle of all the dairy breeds.

B. Sweepstakes Trophy offered by Hoard's Dairyman, Ft. Atkinson, Wisconsin.

The National Dairy Show Association offers a first and second scholarship for the best and second best individual judging of all dairy breeds. These scholarships may be used in defraying the expenses of the students at any agricultural college in the United States.

International Live Stock Exposition Trophies and Prizes.

A trophy is offered for the best judging of heavy horses, beef cattle, sheep and hogs at the International Live Stock Exchange at Chicago each year, to be competed for by selected teams from American colleges of agriculture.

A trophy is offered by the American Saddle Horse Breeders' Association to the agricultural college student judging team doing the best and most efficient judging of saddle horses at the International Live Stock Exposition.

A number of scholarships are also offered at this Exposition for the best individual judging of fat stock.

In the above named contests the Kentucky College of Agriculture has stood high in the list of agricultural colleges in the number of winnings. This College now holds the National Saddle Horse trophy, and the Ayrshire Dairy Cattle trophy mentioned above.

C. Trophy for the best judging of Holstein-Friesian cattle.

D. Trophy for the best judging of Jersey cattle.

E. Trophy for the best judging of Guernsey cattle.

F. Trophy for the best judging of Ayrshire cattle.

In addition to these trophies, the American Jersey Cattle Club, The American Guernsey Cattle Club and the Holstein-Friesian Association of America, each offers a $400 scholarship to the Agricultgral College student making the highest individual score in judging its respective breed of cattle.

ORGANIZATIONS AND STUDENT ACTIVITIES.

Y. M. C. A.

The Young Men's Christian Association has a steadily increasing membersbip and is one of the most potent influences in the University community. It occupies spacious rooms in the gymnasium, well-lighted and heated and provided with suitable furniture offering to the members a place both attractive and convenient. Free stationery and magazines are provided in the reading rooms. In addition to its religious work, including weekly meetings, Mission and Bible study, it offers an interesting social life to its members and engages them in many activities leading to the formation of character. In order to promote most efficiently this varied and important work, a Board of Management consisting of eighteen members co-operates with the Association in its efforts to be influential in the moral and religious life of the University. On this Board the citizens of Lexington, the Faculty, and the students are each represented by six members.

During the present year, the work of the Association has been vigorous and stimulating. A General Secretary, Mr. E. L. Hall, has charge of both the Y. M. C. A. and Y. W. C. A. and devotes his whole time and energy to the work. Systematic work has been done in all the departments under the direction of enthusiastic student chairmen. It has given direction strongly to the social life on the campus throughout the year in providing receptions and other functions.

New students upon arrival in the city in September will be met at the railway station by representatives of the Association, who will offer every assistance in making the new men acquainted, in matriculating, securing quarters, etc.

During the present year the Association has widened its sphere of activity in sending "gospel teams" of students to villages in the State. It has direction also of the Employment Bureau in securing work for students.

Meetings are held each Sunday in the Y. M. C. A. room from 6:15 to 7:15 P. M., to which all students are cordially welcomed.

Y. W. C. A.

This organization is an important feature of life in Patterson Hall. The Association has two attractive rooms, one for religious meetings,

the other a reading room open to all young women residing in Patterson Hall. Both have been well furnished by the University. Weekly Bible and Mission Study Classes and devotional meetings are held and the Association tries to bring every girl something that will help her, give her some work that will assist her to develop her talents and make her life more useful.

The Union Literary Society.

This, the oldest of the literary associations connected with the State University, was formed in 1872 by the consolidation of the Yost Club and the Ashland Institute, and operates under a charter from the legislature. It occupies a commodious and well furnished hall in the gymnasium and is supplied with a library due in part to an appropriation from the State.

The Patterson Literary Society.

This society, formed in 1887 and, at the suggestion of Governor Knott, named in honor of the president of the University, was charted in 1888. It is provided with a handsome room and a good library.

The Philosophian Literary Society.

This society, instituted in 1882, by young women of the University, for literary improvement and social pleasure, offers besides the usual weekly meetings, public entertainments consisting of declamations, essays, criticisms, and addresses.

Horace Mann Literary Society.

All students taking work in the Department of Education are eligible to active membership in the Horace Mann Society. The Society meets promptly at seven o'clock on Thursday evening of each week in a recitation room in the Education Building. The session is limited to one hour and the discussion, debates and papers are devoted to literary and educational subjects. Two or three times during the year the work of the society is given over for the hour to parliamentary drill. The work done here as valuable training for teachers and those who expect to take part in any kind of public exercises in life.

The Canterbury Club.

The Canterbury Club of State University is a literary fraternity organized some three or four years ago for the purpose of stimulating interest in creative literary art. Membership is limited to fifteen for any one year. Only students who show marked interest in and talent for

story writing, poetry, criticism or drama will be received for membership. Eligibility for membership is based primarily upon ability as exhibited in specimens submitted to the Club for criticism and no student is admitted who is not unanimously elected. The Club meets every Thursday night at eight o'clock in the office of the Education Building. Poems, dramas, literary criticisms, stories, pointed paragraphs, etc., are read and discussed by members of the Club.

Mathematics Club.

The White Mathematics Club is composed of instructors, graduate students and major students of the Department of Mathematics. It meets every Tuesday at 3:30 p. m., at which time the various members present special topics of general interest or lead the discussion in portions of some book adopted for year's study.

History Club.

The History Club is an organization composed of the instructors and students of the Department of History. It admits as members also all those interested in this field of work. It meets once a month in the rooms of the Department in the Education Building.

Biology Club.

The Biology Club is an organization composed of members of the faculty and students interested in biology and kindred sciences. Meetings are held once a month in the Science Building. During the spring excursions are made to points of interest in Central Kentucky.

Agricultural Society.

The Agricultural Society is composed of students in the College of Agriculture. Problems of interest to agricultural students are discussed. Lecturers address the Society frequently. It convenes every Monday in the Agricultural Building.

Brooks Civil Engineering Society.

The Brooks Engineering Society, named in honor of the former Dean of the College, is a flourishing organization, and gives abundant opportunity for the discussion of general and special engineering topics.

Mechanical and Electrical Engineering Societies.

The American Society of Mechanical Engineers has a branch in the State University of which all Seniors in the College of Mechanical and

Electrical Engineering are members. Meetings are held every two weeks in the heat engineering room. Each member receives a copy of the Transactions of the Society and the papers contained therein are used as the bases of discussions. Many lecturers of note address the Society during the year.

The American Institute of Electrical Engineers has a branch Society in the University of which all Seniors in this College are members. Meetings are held every two weeks in the heat engineering room. The monthly proceedings of the Institute are received by each member, and the papers contained therein are the bases of discussion. Many prominent electrical engineers visit the University during the year and address these meetings.

Class Societies are organized in every Freshman class in this College. Each adopts a distinctive name and remains intact throughout the four years of the undergraduate course. Meetings are held at times to suit the schedules. During the first three years topics of engineering and literary interest are discussed at the meetings. Lectures by members of the faculty and others frequently make up the program. In the Senior year the Society becomes a social organization inasmuch as the technical and literary work is carried on by the student branches of the American Society of Mechanical Engineers and the American Institute of Electrical Engineers.

Mining Society.

The Kentucky Mining Society was organized in 1908, and was admitted as a Student Branch of the American Institute of Mining Engineers in 1911. It is also a local branch of the Kentucky Mining Institute. Meetings are held on the first Tuesday of each month.

Henry Clay Law Society.

The Henry Clay Law Society is an organization composed of the law students, which convenes once each week in a hall provided for its use. In this society the students by study and actual practice learn the rules of parliamentary law and their use in deliberative assemblies. They organize legislative assemblies and learn the procedure in the framing and passage of bills, both State and Federal. Subjects of a public nature will be discussed so as to familiarize the students with the affairs of the country which will confront them in their experience as citizens and professional men.

Tau Beta Pi.

The Tau Beta Pi Association is an honorary engineering student organization which was founded at Lehigh University in 1885. A student to be eligible to election as a member must maintain an average grade in all his studies throughout his Freshman, Sophomore, and Junior years that will rank him among the first one-fourth of his class who are matriculated in the Colleges of Engineering. Members are elected twice each year. In the Spring those who rank among the first one-eighth of their class up to the end of the first semester of the Junior year are eligible to election. In the Fall those who rank among the first one-fourth of their class up to the end of their Junior year are eligible to election and also the man who leads his class through the Freshman and Sophomore years. This latter man is known as the Tau Beta Pi Scholar. The Kentucky Alpha Chapter was founded at the State University in 1902. Meetings are held on alternate Monday evenings in the Senior reading room.

Alpha Zeta.

Alpha Zeta is an honorary agricultural fraternity. The membership is confined at this University to the Junior and Senior students in the College of Agriculture who attain a rank in scholarship placing them among the upper two-fifths of their classes. Alpha Zeta is a national fraternity consisting at the present time of twenty-three chapters in the leading agricultural colleges in the country. The object of the fraternity is to stimulate interest in the study of scientific agriculture and, in a measure, to reward students and others who have shown themselves exceptionally proficient in scholarship.

Musical Clubs.

The Glee Club is an organization of University students for the cultivation of vocal and instrumental talent. It is under the direction of a competent director and furnishes students an excellent opportunity to develop their musical gifts. Entertainments are given during the year in Lexington and nearby towns.

The Orchestra and the Band are also student organizations. The former furnishes the music for student functions in the Chapel. The Band is the musical organization of the corps of Cadets.

The Strollers.

The Strollers is the dramatic club of the University. Each year the Strollers give one play in Lexington and present another play in several

neighboring towns. Opportunity is offered to students to prove their histrionic ability in an annual contest held under the auspices of the Strollers on Hallow'een and is popularly known as "Amateur Night." All students are eligible to try out for parts in the play, although membership in the organization is necessary to the making of a part.

Press Association.

The University of Kentucky Press Association was organized in 1912. The membership in this organization is open to all students in college who correspond for newspapers. Weekly meetings are held in the rooms of the Department of Journalism. All students whether taking work in journalism or not are encouraged to join this Association.

Publications.

The Idea is published every Thursday throughout the college year by the student body of the University for the benefit of the undergraduates, alumni, and faculty of the institution.

The Transit is issued monthly by the students of the College of Civil Engineering.

The Kentucky Law Journal is issued monthly by the students of the College of Law.

The Experiment Station Bulletin Publications report the research work in the College of Agriculture.

The University Bulletin is issued weekly for the purpose of giving to the students, faculty and friends of the University notice of all meetings, lectures, and entertainments upon the campus or in the city which are of general interest to the students and the University community. This publication is conducted by the Department of Journalism.

The Kentucky High School Quarterly was established January, 1915, and is published four times a year under the auspices of the Department of Education. It is a High School Quarterly devoted chiefly to Kentucky secondary education. Its purpose is largely to bring the High Schools of the State into touch with each other through its columns and to gather material and publish articles of interest and value to High School teachers.

University Paper. The University contemplates publishing in the near future a weekly newspaper that will give all the University news and engage the talent of the institution in developing the resources of the State.

Student Government Organization.

All students of the University are members of the student government organization, the purpose of which is to create and enforce a sentiment against all forms of dishonesty, especially in tests and examinations, and to aid in the enforcement of all University regulations tending to the moral uplift of the student body. The governing body is an executive committee composed of a president and a secretary (a young lady) from the Senior class, a vice president from the Junior class, and ten committeemen, three of whom are Seniors, three Juniors, two Sophomores, and two Freshmen. The duty of the executive committee is to try all cases of dishonorable conduct that are reported and to impose penalty upon those found guilty. A two-thirds vote of the committee is required for conviction. If the student so convicted desires he may have a new trial before a suitable jury of twelve students. The faculty of the University cooperate with the student government organization, and place the students on their honor.

Debating Teams and Oratorical Contests.

The University of Kentucky is a member of a triangular debating league with two Ohio institutions, Miami University and the University of Cincinnati. The University is represented by two teams, one debating at home and one away from home on the same night, with each of the above mentioned institutions. Tryouts for the teams are held under the direction of the faculty committee on oratory and debate and are open to any student in the University.

Representatives of the College of Law participate annually in a debate with representatives of the law college of the University of Cincinnati.

The University is represented annually in the intercollegiate oratorical contest. The various colleges of the state constitute the membership of this oratorical association.

Athletics.

Under this head are included football, baseball, basketball, and track athletics. Participation in these forms of athletics by students is voluntary, although, in certain seasons, and under conditions prescribed by him, the director of physical education for men exempts those who do consistent and satisfactory work in the above forms of athletics from regular work in the gymnasium.

Intercollegiate contests are held in all these forms of athletics. The

interest in these contests is very intense at times. It is intended through interest in athletics and in these contests, to develop a love of outdoor sports and a proper attitude toward life among the students.

The University is a member of the Southern Intercollegiate Athletic Association, and athletics are conducted according to the rules of this association. The management of athletics is in the hands of the students, subject to a committee of the faculty appointed by the President. The student organization controlling athletics is called the Athletic Association. Membership in this association is obtained by payment of five dollars. For this five-dollar fee, in additon to membership in the athletic association, the student receives more than five dollars' worth of coupons, which are accepted at their face value for admission to games and contests.

No student shall be eligible to membership on a varsity team unless, (1) he is carrying satisfactorily ten hours' work or two-thirds of all work scheduled, if carrying more thal 15 hours work; (2) he has been in regular attendance for fifteen days before the first game; (3) he has a satisfactory attendance record in his classes. The manager of each varsity team must furnish to the deans and to the chairman of the athletic committee the names of his team as soon as they are selected by the coach, and all teams engaging in any athletic contest away from the campus during the college year must obtain written permission from the President and the athletic committee. No athletic team is allowed to be absent from the University more than one week (excluding Sunday).

Kentucky Interscholastic Association.

Ths University has fostered a movement which culminated on November 27, 1913, in the formation of the Interscholastic Association. The purpose of the association is "development, regulation and purification of all interscholastic activities, particularly in athletics, music and public speaking." To achieve this end the association holds annually a state-wide contest in public speaking, music and track athletics in which all public high schools of the state are invited to take part. To equalize conditions as far as possible the state has been divided into nine association districts, presided over by vice presidents of the association, for the purpose of holding preliminary contests. Winners of these district contests are eligible to contest in the finals which are held at the University. In the case of debating, two preliminary contests are held, one at home and the other at the district center. The track and field contests are held first at the district centers and the finals at the University on Stoll Field.

The Athletic Association of the University of Kentucky offers a gold and silver medal respectively to the winners of first and second place in each of the track and field events, the music and declamatory contests. A championship cup will be awarded to the winning team in the debating contest and one to the school winning the largest number of points in the finals of the music, declamatory and athletic events.

The following are the district centers with the vice presidents and the other officers of the association :

President ex-officio
Alpha Brumage, University of Kentucky.

Acting Secretary
Charles P. Weaver, University of Kentucky.

District Vice-Presidents
J. C. Cheek, Fulton, Ky.
C. E. Dudley, Earlington, Ky.
T. Stanford Williams, Hardinsburg, Ky.
T. C. Cherry, Bowling Green, Ky.
Tom Houston, Shelbyville, Ky.
W. C. Wilson, Stanford, Ky.
M. O. Winfrey, Middlesboro, Ky.
T. A. Hendricks, Cynthiana, Ky.
J. W. Bradner, Ashland, Ky.

Part III.

COLLEGES AND SCHOOLS.

ORGANIZATION.

College of Arts and Science.

Department of Anatomy and Physiology.
Department of Chemistry.
Department of Education.
Department of English.
Department of Geology.
Department of Greek.
Department of History and Economics.
Department of Journalism.
Department of Latin.
Department of Mathematics and Astronomy.
Department of Modern Languages.
Department of Philosophy.
Department of Physics.

College of Agriculture.

Experiment Station.

Department of Administration.
Department of Agronomy.
Department of Animal Husbandry, (Beef Cattle, Sheep and Swine).
Department of Animal Husbandry, (Dairy Cattle, Horses and Poultry.)
Department of Chemistry.
Department of Entomology and Botany.
Department of Extension.
Department of Feed Control.
Department of Fertilizer Control.
Department of Food and Drug Control.
Department of Horticulture.
Department of Research.

School of Agriculture.

Department of Agronomy.
Department of Animal Husbandry.
Department of Bacteriology.
Department of Botany.
Department of Entomology and Zoology.
Department of Horticulture.
Department of Veterinary Science.

School of Home Economics.

Department of Household Arts.
Department of Household Science.

School of Extension.

College of Civil Engineering.

School of Civil Engineering.

School of Rural and Highway Engineering.

College of Mechanical and Electrical Engineering.

Department of Drawing.
Department of Electrical Engineering.
Department of Heat Engineering.
Department of Mechanics of Engineering.
Department of Practical Mechanics.

College of Mines and Metallurgy.

School of Mining Engineering.

School of Metallurgical Engineering.

School of Extension.

College of Law.

Graduate School.

Summer School.

Additional General Departments.

Department of Physical Education.
Department of Military Science.

COLLEGE OF ARTS AND SCIENCE.

A. M. MILLER, DEAN.

GENERAL STATEMENT.

Organization.

The College of Arts and Science embraces 14 Departments: Anatomy and Physiology, English, Geology, Greek, History and Political Science, Latin, Mathematics and Astronomy, Modern Languages, Philosphy, Physics, Chemistry, offering in addition to the general course in Chemistry a course in Industrial Chemistry, Education, offering professional courses to those preparing to teach, and Journalism, affording preparation for a journalistic career.

Entrance Requirements.

To enter any of the courses offered in the College of Arts and Science, the applicant must be able to include in his fifteen units of entrance credits nine and one-half units prescribed as follows :

English three units, Algebra one and one-half units, Plane Geometry one unit, Foreign Language two units, History one unit, Science one unit.

The College offers undergraduate courses leading to the degrees of A.B. and B.S.

To enter a course leading to the A.B. degree, the applicant must offer in addition to the nine and one-half units prescribed above two more units in foreign language, so chosen as to include in the four units of foreign language at least three in Latin.

To enter a course leading to the B.S. degree, major study Mathematics, Physics, Chemistry or Geology, the applicant must offer in addition to the nine and one-half units prescribed above, Solid Geometry one-half unit, making a total for such students of ten prescribed units.

REQUIREMENTS FOR GRADUATION.

Definition of a Credit.

The term "credit," as used in this college, is defined as the satisfactory completion of a study, involving lectures or recitations for one

hour per week for one year, or laboratory work for two hours per week for the same period.

Credits required.

To receive an undergraduate degree, in addition to fulfilling the requirements for entrance to a course leading to the degree, the matriculate in the College of Arts and Science must be able to offer 69 credits, inclusive of those required in Military Science, Physical Training and Home Economics.

Men are required to offer three credits in Military Science and two in Physical Training, and women two credits in Home Economics and two in Physical Training.

Military Science and Physical Training are classed as laboratory work.

Persons excused from Military Science or Physical Training for disability or any other cause, unless when they entered they brought credits in the subjects from some other institution, must offer an equivalent number of credits in some other subject or subjects.

Credits Permitted in Each Year.

A student must take a sufficient amount of work to secure at least 17 credits each year during the Freshman and Sophomore years; and, except by special permission of the Faculty of the College of Arts and Science, he will not be allowed during the Freshman and Sophomore years more than 21½ credits each year, or during the Junior and Senior years more than 18 credits each year.

Permission to carry work in excess of the 21½ and 18 hours referred to above must be obtained from the committee on extra studies if the student is to receive extra credit for such work. After such permission is granted all work must be of A or B grade in order to entitle the student to count any excess or credit.

Rules Regarding Classification.

In order to be considered a member of the Senior Class of any year, and eligible to graduate in June of that year, a student must at the beginning of the college year in September have completed at least 51 credits.

The classification of every student, though it may be arranged by the professor under whom he has his major subject, must have the approval of the Dean; *and no charge whatsoever may be made in this classification without the express permission of the Dean.*

Rules for Removal of Conditions.

The regular time for examinations to remove conditions is the third week before the end of the term following that in which the condition occurred. Examinations to remove conditions may also be held during the week preceding registration. The Registrar will, after consultation with the Heads of Departments, determine the hours for these examinations and announce them on the bulletin boards. The student must first apply in writing to the Registrar for permission to take the examination. He will then take this permit to the Head of the Department, who will arrange for the examination and report the result to the Registrar upon the card issued to the student. In exceptional cases, examinations may be given at times other than these mentioned above, at the discretion of the Registrar and the Head of the Department concerned. For an examination held at a time other than the regular times, a fee of $1.00 will be charged.

Majors of A. B. Students.

All candidates for the A.B. degree must by the beginning of the Sophomore year select a major from the following subjects: Anatomy and Physiology, Education, English, History and Political Economy, Journalism, Latin and Greek, Mathematics and Astronomy, Modern Languages, Philosophy.

Subjects Required for the A. B. Degree.

The following subjects are required of all candidates for the A.B. degree. All other subjects are elective, under the advice and direction of the student's major professor (the professor in charge of the work which the student may choose as his major study), who assists him in outlining his subjects.

Freshman Year.

	Credits.
English 1	3
History 1, 2 or 3	2 or 3
Math. 2 and 3, or Chem. 1, or Physics 1 and 2	5
Latin 5	4
Greek or German	3
Physical Education	1
Mil. Science or Home Economics	1.5 or 2
Total	19.5 to 21

Sophomore Year.

	Credits.
English 3	3
Physiology 1, or Botany 1, or Zoology 9	2
Physical Education	1
Military Science	1.5
Total	Men, 7.5; Women, 6.

Junior and Senior Years.

	Credits.
Logic or History of Philosophy	3
Geology 1 or Astronomy 1	2
Total	5

Majors for B. S. Students.

All candidates for this degree must by the beginning of their Sophomore year select a major from one of the following subjects: Anatomy and Physiology, Chemistry, Education, Geology, Mathematics and Astronomy, Physics.

Subjects Required for the B. S. Degree.

Freshman Year.

	Credits.
English 1	3
History 1, 2, or 3	2 or 3
Mathematics 2 and 3	5
Chemistry 1	5
German	3
Physical Education	1
Military Science or Home Economics	1.5 or 2
Total	20.5 or 22

Sophomore Year.

	Credits.
Physics 1a, 2a, 5 and 6	5
German 4	3
Physiology 1	3
Zoology 9 or Botany 1	1.5
Physical Education	1
Military Science	1.5
Total	Men, 15; women, 13.5

Junior and Senior Years.

	Credits.
Logic or History of Philosophy	3
Geology 1 or Astronomy 1	2
Total	5

Course in Industrial Chemistry.

This is a prescribed course throughout, as set forth in the announcement made by the Department of Chemistry, and leads to the degree of B. S.

The Arts—Law Course.

A student in the Arts course may, when entitled to senior classsification, be allowed to take a part of his senior work in the College of Law and count this work toward his A. B. degree. Such students will thus be enabled to complete the law course in two more years instead of the usual three years. For information concerning the law degree, see statement of the College of Law.

ANATOMY AND PHYSIOLOGY.

Professor Pryor.

The Department of Anatomy and Physiology occupies one-half of the second floor of the Natural Science Building. The space assigned to this department includes a large lecture and general recitation room, an office and a laboratory.

The lecture room is provided with a Thompson Reflectoscope and Stereopticon with a microscopic attachment. This method of giving illustrated lectures is extensively used. A large number of lantern slides have been purchased or made. These include all kinds of anatomical, physiological, histological and pathological subjects, and they have been selected in order to show not only human anatomy, but sufficient comparative anatomy to illustrate the development and evolution of the organ or system.

The lecture and general recitation room is perhaps the best equipped room for its purpose to be found in any institution of the South. It is well lighted and ventilated, is provided with the best opera chairs with arm rests, affording every convenience and facility for student and lecturer.

The office contains the nucleus of a library. It is the purpose of the head of this department to provide students with the latest and best books on anatomy, physiology, hygiene, histology, and bacteriology.

The laboratory is provided with a Bausch and Lomb incubator, microscopes, microtomes, paraffin bath, etc. Tables are provided for individual students. Each table is equipped with the apparatus necessary for experimental work in physiology. Students also have access to and use the kymograph, artificial circulation scheme (Porter's), capillary electrometer, artificial eye (Kuhne's), heart-holder, ergograph, rheochord, plethysmograph, etc.

The department is supplied with all kinds of models, such as an Auxoux papier mache manikin, Auzoux's models of the eye in full and in section, models of the ear, larynx, side of the face, hand, etc., skeletons in full and in section; complete disarticulated skeletons for the individual use of students; a spaced skull; a Thoma-Zeiss Haemacytometer ; a Dudgeon's and a Marey's Sphygomograph ; charts of all kinds, microscopes, etc. Microscopic slides are exhibited showing the process of karyokinesis.

The method of instruction is by lectures, demonstrations and recitations. Drawings are made on the blackboard in chalk by the instructor, and the student is required to copy them. They include drawings of the heart, and of the great blood vessels in colors; sections of the eye showing the connection of the cornea and sclerotic coat at the origin of the ciliary muscle, one turn of the cochlea giving the organ of Corti in full; the membranous labyrinth; a cross section of the spinal cord; a scheme illustrating the system of neurones, central and peripheral, both motor and sensory.

The student is required to take notes from lectures, to copy and preserve them for study and reference. The note books are inspected at intervals, correct spelling and neatness in preparing them being insisted on.

PRIMARLY FOR UNDERGRADUATES.

1. General Physiology. Lectures, demonstrations, recitations, Three hours per week. Throughout the year. (PRYOR)

1a. General Phygiology. Lectures, demonstrations, recitations, arranged to suit the course in Agriculture. Three hours per week at 10. First semester, repeated the second semester. (PRYOR)

2. Human Osteology. Lectures, recitations, laboratory. Two hours per week. Throughout the year, at 9. (PRYOR)

3. Advanced Physiology. Lectures and laboratory. Four hours per week. Second semester, at 2:30. (PRYOR)

4. Laboratory Physiology. Four hours per week. First semester, at 1:30. (PRYOR)

Courses Preparatory to the Study of Medicine. These courses leading to the degree of A. B. or B. S., with Anatomy and Physiology as the major study, are arranged to suit students who intend to enter upon a profession, and especially those who are to devote themselves to the study of medicine. The first two years are arranged to comply with the requirements of the American Medical Association and the Association of American Medical Colleges for entrance to all Class A plus Medical Schools except those requiring a degree for entrance. The four year course meets the requirements for entrance of all Medical Schools. A liberal education in the Arts and Sciences is of inestimable advantage to one intending to pursue the study of medicine. It is a difficult matter to teach modern medicine to one who has not had some of these preliminaries. A thorough training in chemistry and physics, a reading knowledge of German and French, a working knowledge of the microscope, and the process of embedding, sectioning and staining, a solid foundation in anatomy and physiology will not only give advanced standing in the medical school, but will lay a truly scientific foundation upon which a substantial superstructure may be erected.

Text books: Martin's *Human Body;* Stewart's *Manual; Syllabus of the Professor's Lectures;* Gray's *Anatomy.*

Books of Reference: Cunningham's *Anatomy;* Morris's *Anatomy:* Gerrish's *Anatomy;* Howell's *Physiology;* Schaefer's *Physiology; Amsrican Text-Book;* Loeb's *Physiology of the Brain.*

ASTRONOMY.

Courses in Astronomy are described under the Department of Mathematics and Astronomy.

CHEMISTRY.

Professor Tuttle, Professor Maxson, Assistant Professor Daniels, Dr. Bedford, Mr. Georger, Mr. Doubleday.

Candidates for the degree of Bachelor of Science in Chemistry must have completed four years in chemistry, the subjects to be selected from the list given below The Course in Industrial Chemistry is a prescribed

course throughout and leads to the degree Bachelor of Science in Industrial Chemistry.

The Department of Chemistry offers courses of study in *General Inorganic Chemistry, Qualitative Analysis, Quantitative Analysis, Organic Chemistry, Physical Chemistry, Industrial Chemistry, Agricultural Chemistry.*

General Inorganic Chemistry. The work in General Chemistry extends throughout the year and must be taken by all students who intend to continue work in the department. Instruction is given by lectures, recitations and laboratory work. In the laboratory the student becomes familiar with apparatus and the methods of work and gains an intimate knowledge of the chemistry of the non-metals and metals which are a necessary preliminary to the study of qualitative analysis. During the second semester the student manufactures and purifies simple inorganic compounds.

Qualitative Analysis. This subject is studied in the laboratory during the first semester, the amount of time devoted to this work depending on the course of study pursued by the student. The student first becomes familiar with the reactions involved in the detection of the elements and then employs the knowledge so gained in the analysis of solids and of substances in solution.

Quantitative Analysis. The preliminary work in Quantitative Analysis includes the gravimetric analysis of simple substances of known composition and such work in volumetric analysis as shall enable the student to become familiar with the use of "normal" solutions and acquire facility in the calculation of results. Subsequent work embraces the analysis of ores, iron and steel, alloys, coal and coke, water, silicates, flue gases, paint, fertilizers, and a variety of other commercial products. All work is accompanied by lecture and recitation exercises, where particular attention is given to the chemistry of the processes used.

Organic Chemistry. The more advanced work in the chemistry of the Carbon Compounds is preceded by a brief general survey of the whole subject. The laboratory course of study in the preparation and purification of typical organic compounds extends throughout the semester and is therefore arranged to accompany and supplement the class-room instruction.

Physical Chemistry. This subject is studied by means of lectures and recitations, followed by laboratory exercises designed to acquaint the student with the execution of physico-chemical measurements.

Industrial Chemistry. The chemistry of industrial and manufacturing processes is studied throughout the Senior year, at a time when the student is best equipped for the purpose. As preliminary course, advanced Quantitative Analysis, Organic and Inorganic Preparations are of the greatest value. To keep in touch with modern practices, current periodical literature is carefully studied and manufacturing establishments are visited.

Buildings and Equipment. The building formerly occupied by the Experiment Station is now devoted entirely to Chemistry and is supplemented by a new building costing $25,000. The equipment includes such apparatus and chemicals as to enable the student to carry on work advantageously. There is a very complete and modern outfit for the analysis of flue gases, apparatus for the determination of molecular weights, platinum ware, apparatus of approved design for the analysis of water and an excellent equipment for the study of the compounds of carbon. A very important adjunct to the equipment is the Department Library of about five hundred volumes. The very complete library of the Experiment Station is available at all times for consultation.

1. **General Inorganic Chemistry.** Chemistry of the non-metallic elements. Lectures, class-room exercises and laboratory work. Five hours per week. First semester. (MAXSON, OTHERS)

1a. **Elementary Inorganic Chemistry.** A course arranged to suit the needs of students in the Two Year Course in Agriculture. Two hours per week. Throughout the year. (GEORGER)

2. **General Inorganic Chemistry.** Chemistry of the metals. Lectures. class-room exercises and laboratory work. Prerequisite, Chemistry 1. Six hours per week. Second semester. (MAXSON AND OTHERS)

3. **Inorganic Preparations.** A practical laboratory course devoted to the preparation of inorganic compounds from the crude material. Prerequisites, Chemistry 1, and continuation of Chemistry 2. Two hours per week. Second semester. (MAXSON)

4. **Qualitative Analysis.** Laboratory work accompanied by recitation periods. Prerequisite, Chemistry 2. Fours hours per week. First semester. (MAXSON)

5. **Advanced Inorganic Chemistry.** A more advanced course in Inorganic Chemistry, primarily for students specializing in Chemistry. Prerequisite, Chemistry 2. Two hours per week. First semester. (MAXSON)

6. **Organic Chemistry.** An elementary course serving as an intro-

duction to the study of the compounds and carbon. Prerequisite, Chemistry 2. Two hours per week. Second semester. (DANIELS)

7. **Organic Chemistry.** An elementary course for non-professional students. Prerequisite, Chemistry 2. Two hours per week. Second semester. (DANIELS)

8. **Quantitative Analysis.** A laboratory course accompanied by lectures and class-room exercises. Gravimetric and volumetric methods of analysis are studied in detail during the second semester. Prerequisite, Chemistry 4. Five hours per week. (TUTTLE, BEDFORD)

9. **Quantitative Analysis.** A lecture and laboratory course devoted to the analysis of ores, alloys, etc. Prerequisite, Chemistry 8. Five hours per week. First semester. (TUTTLE, BEDFORD)

10. **Quantitative Analysis.** A laboratory course accompanied by lectures and class-room exercises arranged for students in Mining and Metallurgy. Five hours per week. Second semester. (TUTTLE)

11. **Agricultural Analysis.** An introductory course in Quantitative Analysis arranged for the students in the Course of Agriculture. The elements of quantitative analysis are studied with special reference to the constituents of soil, fertilizers and agricultural products. Prerequisites, Chemistry 1 and 2. Five hours per week. First semester. (TUTTLE)

12. **Advanced Agricultural Analysis.** A laboratory course having for its object the complete analysis of fertilizers, feeds, soils and agricultural products. Prerequisite, Chemistry 8 or 11. Four hours per week. Second semester. (TUTTLE)

13. **Organic Chemistry.** A more advanced course of class-room exercises on the aliphatic series accompanied by lectures on the more important research problems, such as Fischer's work on the carbohydrates. Prerequisite, Chemistry 6 or 7. Three hours per week. First semester. (DANIELS)

13a. **Cyclic Compounds.** The lecture work comprises such researches as the solution of the formula of camphor and of various terpenes. The student's attention is also directed to the classification of reactions of organic compounds. Prerequisite, Chemistry 13. Two hours per week. Second semester. (DANIELS)

14. **Advanced Quantitative Analysis.** The analysis of iron and steel, slags and rocks. Five hours per week. First semester. (TUTTLE)

15. **Theoretical Chemistry.** Lectures and recitations on the modern theories of physical chemistry. Two hours per week. Throughout the year. (BEDFORD)

16. **Organic Preparations and Analysis.** A laboratory course in the preparation and analysis of typical organic compounds. Must be preceded by Chemistry 13. Four hours per week. Second semester. (TUTTLE, DANIELS)

17. **Gas Analysis.** A laboratory course in the analysis of illuminating, natural and flue gases, using the methods and apparatus of Hempel, Orsat and others. Prerequisite, Chemistry 2. One hour per week. Second semester. (TUTTLE, BEDFORD)

18. **Water Analysis.** In this course waters are examined to determine their suitableness for domestic and other purposes. Two hours per week. First semester. (TUTTLE)

19. **Industrial Chemistry.** In this course the chemistry of manufacturing processes is studied in detail, and when possible, manufacturing establishments in the vicinity are visited. Two hours per week. Throughout the year. (MAXSON)

20. **Electrochemistry.** Lectures and recitations on the theory and practical application of electricity to chemical industrial processes. Prerequisite, Chemistry 15 and 21. Three hours per week. First semester. (BEDFORD)

21. **Physical Chemistry.** Laboratory studies in physico-chemical measurements. One hour per week. Throughout the year. (BEDFORD)

22. **Journal Club.** A weekly exercise for Seniors in the Courses in Chemistry devoted to a study of current periodical literature and conferences. One hour per week. Throughout the year. (MAXSON)

23. **Advanced Inorganic Chemistry.** Lectures, collateral reading and quizzes. A course designed for students who would broaden the scope of their training in Inorganic Chemistry. Elective. Two hours per week. Second semester. (MAXSON)

24. **Advanced Synthetic Inorganic Chemistry.** A course planned to aid the student in gaining a more adequate knowledge of practical Inorganic Chemistry. Elective. Five hours per week. Second semester. (MAXSON)

25. **Advanced Physical Chemistry.** Laboratory work on selected topics accompanied by reports on related subjects. Elective. Prerequisite, Chemistry 21. Five hours per week. Second semester. (BEDFORD)

26. **Advanced Organic Chemistry.** Critical comparison of preparation methods and research problems accompanied by presentation of results in thesis form. Elective. Prerequisite, Chemistry 13a. Five hours per week. Second semester. (DANIELS)

27. Selected Problems in Quantitative Analysis. Elective. Prerequisite, Chemistry 14. Five hours per week. Second semester. (TUTTLE.)

COURSE IN INDUSTRIAL CHEMISTRY.

The Course in Industrial Chemistry, a prescribed course of studies leading to the degree of Bachelor of Science in Industrial Chemistry, aims to provide a solid foundation for continued work in chemistry. Electives are not encouraged before the Senior year in the belief that the related courses of study can be more wisely selected by experienced educators than by the student.

During the last half of the Senior year electives in chemistry must bring the total amount of work up to nineteen or twenty hours per week. Whenever practicable for the student, he is encouraged to pursue graduate work here or elsewhere before engaging in professional work, but there is a steady and increasing demand for the graduates as soon as they have finished their course of study at this University. Nearly every industry today makes use of the chemist, and experience has shown that the training secured in the Course in Industrial Chemistry will enable the graduate to engage at once in technical work with excellent prospects for success. In this course the student is expected to have three years work in modern language as follows:

German 3, must be completed and if possible, one or two years work in French, so that a fair reading knowledge of both languages may be acquired.

OUTLINE OF COURSE LEADING TO THE DEGREE B.S. IN INDUSTRIAL CHEMISTRY.

FRESHMAN YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
English 1	105	English Composition	3		1.5
Mathematics 3	123	Algebra	5		2.5
German 1	126	Bierwirth's Elements of German	5		1.5
Botany 1		General Botany	2	4	2.0
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5
					11.25

*A credit represents one recitation or two hours laboratory per week for thirty-six weeks.

SECOND SEMESTER.

English 1	105	English Composition	3		1.5
Mathematics 2	123	Trigonometry	5		2.5
German 1	126	Bierwirth's Elements of German	5		1.5
Chemistry 2	97	General Inorganic Chemistry	3	6	3.0
Chemistry 3	97	Inorganic Preparations		4	1.0
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5
					10.75

SOPHOMORE YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Mathematics 4	123	Analytical Geometry	5		2.5
German 2	126	Selections from German Prose & Poetry	5		1.5
Chemistry 5	97	Inorganic Chemistry	2		1.0
Physics 1a	128	General Physics	3		1.5
Chemistry 4	97	Qualitative Analysis		8	2.0
Physics 5	128	Physical Measurements		4	1.0
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5
					10.75

SECOND SEMESTER.

German 2	126	Selections from German Prose & Poetry	5		1.5
Chemistry 8	98	Quantitative Analysis	1	8	2.5
Chemistry 6	97	Organic Chemistry (Elementary)	2		1.0
Physics 2a	128	General Physics	3		1.5
Mathematics 4	123	Analytical Geometry	5		2.5
Physics 6	128	Physical Measurements		4	1.0
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5
					10.75

JUNIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Chemistry 13	98	Organic Chemistry, Aliphatic Series	3		1.5
Chemistry 9	98	Quantitative Analysis		10	2.5
Chemistry 15	98	Theoretical Chemistry	2		1.0
Political Science 1	115	American Government	3		1.5
Political Economy 1	114	Economics	2		1.0
German 3	126	Freshman German	3		1.5
Chemistry 21	99	Physical Chemistry		2	0.5
					9.5

SECOND SEMESTER.

Chemistry 13a	98	Organic Chemistry, Cyclic Series	2		1.0
Chemistry 17	99	Gas Analysis		2	0.5
Chemistry 15	98	Theoretical Chemistry	2		1.0
Political Science 1	115	American Government	3		1.5
Political Economy 1	114	Economics	2		1.0
German 3	126	Freshman German	3		1.5
Chemistry 16	99	Organic Preparations and Analysis		8	2.0
Geology 3	111	Determination of Common Minerals		4	1.0
Chemistry 21	99	Physical Chemistry, Continued		2	0.5
					10.0

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Chemistry 19	99	Industrial Chemistry	2		1.0
Chemistry 20	99	Electrochemistry	3		1.5
Chemistry 22	99	Journal Club	1		0.5
Philosophy 1	127	Logic, Deductive and Inductive	3		1.5
Geology 1 or 6	111	Elem. Geol. or Econ. Geology	4 or 3		2.0 or 1.5
Chemistry 18	99	Water Analysis		4	1.0
Chemistry 14	98	Advanced Quantitative Analysis		10	2.5
					10. or 9.5

SECOND SEMESTER.

Chemistry 19	99	Industrial Chemistry	2		1.0
Metallurgy 16		Metallurgy	2		1.0
Philosophy 1	127	Logic, Introduction to Philosophy	3		1.5
Chemistry 22	99	Journal Club	1		0.5
Chemistry	99	Elective		12	3.0
Assaying		Assaying		4	1.0
					8.0

EDUCATION.

Professor Noe, Professor Tigert, Professor Rhoads, Associate Professor Baker.

This department is a training school for teachers. Courses are offered in the Philosophy and the History of Education, in Educational Psychology and in Administration and Method. The high schools of Kentucky are demanding teachers who have specialized in one or more subjects as well as professionally trained teachers. Students doing work in the Department of Education are expected early in their course to select a

group of related subjects to which they will devote the major part of their work in college.

By an act approved March 16, 1908, the General Assembly of the State of Kentucky established in the State University a Department of Education with collegiate rank, leading to the usual degrees in pedagogy as maintained in other similar institutions, with the provision that the degrees of Bachelor of Arts in Educatlon and Bachelor of Science in Education may be conferred, which, with the approval of the State Superintendent of Public Instruction, will entitle the holder to teach in any of the common schools and high schools of the Commonwealth without further examination during life or good behavior.

Under the State law of 1908 all students in this department of the University are eligible for the *Elementary Teacher's Certificate* at the completion of one year's study. This certificate entitles the holder of it to teach in any public school in the State for a period of two years without further examination.

At the completion of two years' work in this department the student becomes eligible to receive the *Intermediate Certificate*, which entitles the holder to teach in any school of the State for a period of four years without further examination.

At the completion of three years' work in this department an *Advanced Certificate* may be issued, which will entitle the holder to teach in any school in the State for a period of three years. At the end of this period, with the approval of the State Superintendent, a *Life Certificate* may be substituted for the advanced certificate, on the presentation to the college authorities of satisfactory evidence of the candidate's teaching ability and moral character.

The distinctive feature of the work offered by the Department of Education consists in the courses in Educational Psychology, History of Education and Theory of Teaching. Practice work, observation and criticism have been arranged for. Experimental Psychology has become an important phase of the work in the Department of Education. We have increased very largely the amount of apparatus for this work during the year so that now our Department is well equipped for the study of Educational Psychology.

The Horace Mann Literary Society meets every Thursday night for one hour in the Education Building. This society is becoming more and more a distinctive force in the social and literary development of students in the Department of Education. It is well attended at every meeting and the liveliest interest is manifested in all the work of the society.

1. Methods and Aims of Study. An introductory course in the learning process. Text book and lectures. Monday, Wednesday, Friday. First semester. (NOE)

2. Elementary Educational Psychology. Nature and development of the mind during childhood and youth. Text book and lectures. Monday, Wednesday, Friday. Second Semester. (NOE)

3 Psychology. Lectures, text and reports. Required of all major education students. Monday, Wednesday, Friday. First and second semesters. (TIGERT)

4. Principles of Education. A study of the background of educational thought and practice. Text books, lectures and reports. Tuesday, Thursday, Saturday. First semester. (NOE)

5. Technique in Teaching. A discussion of method with observation and practice teaching. Tuesday, Thursday, Saturday. Second semester. (NOE)

7. History of Education. Ancient and Mediaeval periods. Text book, lectures, assigned readings and discussions. Monday, Wednesday, Friday. First semester. (BAKER)

8. History of Education. The Modern Period. This course is a survey of the progress of educational theory and practice from the period of the Renaissance. Lectures, text book, assigned readings and reports. Monday, Wednesday, Friday. Second semester. (BAKER)

9. Principles of Secondary Education. In this course the Kentucky High School is made the basis of a study of principles of secondary education and methods of teaching in the high school. Monday, Wednesday. First and second semesters. (RHOADS, BAKER)

10. Moral and Esthetic Education. The first half of the semester will be devoted to a study of the principles of moral education; the second half, to a study of the laws underlying the appreciation of the beautiful. Readings, reports and lectures. Monday, Wednesday, Friday. Second semester. (NOE)

13. Supervision and Administration. The supervisor's function in training teachers. Problems of school administration. A study of the school systems. Lectures and reports. Tuesday, Thursday. Second semester. (BAKER)

14. Principles of Social Education. A study of the development of the social mind with special reference to education. Text book, readings and reports. Monday, Wednesday, Friday. First semester. (NOE)

16. Seminary. Problems of Educational Psychology. Study of recent experiments of Educational Psychology in current literature. Prerequisite, Principles of Education. Two hours, Tuesday evening. First and second semesters. (NOE)

18. Seminary. Educational Classics. Educational writings of Plato, Aristotle, and others. Two hours, Wednesday evening. First and second semesters. (BAKER)

ENGLISH LANGUAGE AND LITERATURE.

Associate Professor Dantzler, Associate Professor Farquhar, Associate Professor Hamilton, Associate Professor Weaver, Mr. Taylor.

The equipment of this department is the general library of the University in which are volumes on composition, public speaking and general literature. It is especially well provided with encyclopedias and current magazines, including many foreign periodicals. The department will soon add the complete set of Everyman's Library affording ample material for collateral reading. The class in library training is now compiling a bibliography for the use of the English classes.

Students who intend to teach High School English are advised to consider courses 1, 3, 11, 16, 17, 21, 27.

Students who select English as a major study are expected to take courses 1, 2, 3, 9, 10, 16, 17, 20, and two other courses to be chosen by the student from among the electives for Juniors and Seniors. They should take History 4 in the Sophomore year.

ENGLISH LANGUAGE AND RHETORIC.

1. English Composition. The object of this course is to give training in the writing of correct and clear English. Accuracy of expression is desired rather than proficiency in style. A text book will be used, but the instruction will also be based upon the study of representative English masterpieces. English 1 is required of all Freshman, and is prerequisite to all other courses in English. Eleven sections. Three hours per week. Throughout the year. (ALL INSTRUCTORS)

1a. English Composition. This course is the same as English 1, but it begins at the second semester and extends through the first semester of the following year. It is designed for those students who failed in the first semester of English 1. Three hours per week. Throughout the year. (WEAVER)

2. Advanced Composition. This course is for students who have acquired some proficiency in expression, and who wish to do further work in the subject. The object is to cultivate, facility and individuality of style, to become better acquainted with the art of composition. Required of Sophomores whose major is English, but open to all students. Prerequisite, English 1 or 1a. Two hours per week. Throughout the year. (WEAVER)

7. Public Speaking. The work of this class consists of oral composition, declamations and dramatic readings. The student is taught the principles of expression, interpretation and elocution in general. Two hours a week. Throughout the year. (WEAVER)

8. Forensics. Students in this class are taught both the theory and practice of debating. Frequent debates are held throughout the year. Required of all Law students. Two hours a week. Throughout hte year. (WEAVER)

8a. The Speech for Special Occasions. In this course students are taught how to make appropriate addresses on practically all occasions where speeches of a definite order are required. Stress is laid upon the ability to develop a theme to a logical conclusion and the student is required to make frequent addresses before the class. Prerequisite, 7 or 8. Two hours per week. Throughout the year. (WEAVER)

10. Old English. The object of this course is to introduce the student to the beginnings of English prose and poetry. During the first semester the elements of old English grammar will be studied with reading of easy prose and poetry. During the second semester attention will be given to the literature and the social life of the period. Required of Juniors whose major study is English. Prerequisites, English 1 and 2. Three hours per week. Throughout the year. (DANTZLER)

19. Advanced Old English. This course is designed for those who wish to continue the work of English 10. Selections from Cynewulf will be read. Lectures and papers on assigned topics. Elective for Juniors and Seniors. Prerequisite, English 10. Three hours per week. First semester. (DANTZLER)

11. History of the English Language. In this course the development of the language from the old English period to the present will be traced. The work will be linguistic and literary. The course is open to all Juniors and Seniors, and is recommended to those who intend to become teachers of English. Three hours per week. Second semester. (DANTZLER)

25. **History of English Prosody.** In this course a study is made of the forms and principles of English verse; frequent exercises. Elective for Juniors and Seniors. Three hours per week. Second semester.
(WEAVER)

ENGLISH LITERATURE.

3. **History of English Literature.** This course is designed to give the student a general survey of English literature from the old English period to the present. Extensive readings will be made from selected masterpieces, with weekly written themes by the student. This course is required of all Sophomores and is prerequisite to all the other courses in English literature. Prerequisite, English 1. Three hours per week. Throughout the year. (DANTZLER, HAMILTON, FARQUHAR, WEAVER)

16. **English Romanticism.** This course traces the history of the English Romantic movement from its beginning to its culmination in the poets of the early nineteenth century. Special attention is paid to the poetry of Wordsworth, Coleridge, Byron, Shelley and Keats. While a text book may be used, the work consists of a critical study of the representative poets. Required of Juniors whose major work is English. Open to all Juniors and Seniors. Prerequisites, English 1 and 3. Three hours per week. First semester. (DANTZLER)

17. **Victorian Poets.** This course is a continuation of English 16. Special attention will be given to the works of Tennyson, the two Brownings and Swinburne. Considerable attention will be devoted to the writing of essays. Required of Juniors whose major work is English. Open to all Juniors and Seniors. Three hours per week. Second semester.
(DANTZLER)

20. **Principles of Literary Criticism.** The course attempts to show criticism as a growth and development in an historical survey but principally to give a corpus of opinion about literature. Required of Seniors whose major study is English. Open to all Seniors. Texts: *Principles of Criticism*—Worsfold; *Modern English Literature Criticism*—Brewster. Three hours per week. Throughout the year.
(FARQUHAR)

9. **Pro-Seminary Course.** This is a literary course, but it is designed also to train the student in the principles of form and method. The subjects for study and investigation vary from year to year. For 1915-16 the life and works of Milton will be studied. Required of Seniors whose major study is English. Open to all Seniors. Two hours per week. Throughout the year. (DANTZLER)

24. **Pre-Shakespearan and Shakespearean Drama.** The first semester is devoted to a study of the Pre-Shakespearean Drama in an effort to find the native English element in Shakespeare and prepare for an intensive study of Shakespeare's works in the second semester. Elective for Juniors and Seniors. Texts: *Pre-Shakespearean Drama*—Manly; Shakespearean Texts. Three hours per week. Throughout the year. (FARQUHAR)

23. **English and Scots Ballads.** This course is designed to be a literary and social study. It is expected to encourage interest in the folklore of Kentucky. Prerequisite, English 1. Two hours per week. Second semester. (DANTZLER)

15. **The Literature of the Eighteenth Century.** This course traces the literary developments that culminated in the eighteenth century with all main characteristics, social, intellectual, etc. Elective for Juniors and Seniors. Text: *History of English Literature*, Eighteenth Century.—Gosse. Three hours per week. Throughout the year. (FARQUHAR)

15b. **The English Novel.** Introduction to the study of English fiction. Readings, with a view of illustrating the evolution of the novel as well as to develop an appreciation of the novel as a form of literature. Three hours per week. First semester. (HAMILTON)

15c. **The Modern Drama.** The development of the modern drama. Dramatic tendencies in English and continental drama. Representative readings. Three hours per week. Second semester. (HAMILTON)

18. **Victorian Essayists.** After a general survey of the earlier essayists, the class will study in detail Carlyle, Macaulay, Arnold and Ruskin The social, literary and religious movements are kept constantly in mind. Weekly themes upon assigned topics. Elective for Juniors and Seniors. Two hours per week. First semester. (DANTZLER)

21. **American Literature.** The literature of America is studied in its relation to national life and thought. The leading authors will be studied in class, while the minor writers will constitute parallel reading. Elective for Juniors and Seniors. Two hours per week. Second semester. (WEAVER)

22. **Literature of the Bible.** A literary study of the Bible by books. It assists to an appreciation of literature generally because of the demand that literature identify itself with the highest thought and feeling. Open to all but Freshmen. Text: *The Modern Reader's Bible*—Moulton. Two hours per week. Throughout the year. (FARQUHAR)

29. Modern Literature in English. German and Italian. Goethe and his time. Faust, Part I and selections from Part II. Dante and his time. Vita Nuova. Selections from the Divina Commedia. Two hours per week. Throughout the year. (HAMILTON)

26. Library Training. Fundamental principles as an aid to a broader knowledge of English. Lectures on theory throughout the course. Two hours laboratory after Christmas. First semester—Training by librarian in classification, use of reference books, card catalog, preparation of bibliographies, etc. Second Semester—Book selection and ordering, book binding, and mending, literature for children, school libraries, etc. Open to all but Freshmen. Two hours per week. Throughout the year. (HAMILTON)

26a. Advanced Library Training. First semester—Study of classification. Problems covering all divisions of Dewey decimal classification. Reports on articles in current library periodicals. Second semester—Accessioning, book numbers, elements of cataloging and shelf-listing. The reference Library at the University, Experiment Station and Public Library Lexington, for laboratory work. Prerequisite, 26. Two hours per week. Throughout the year. (HAMILTON)

27. Teacher's Course in English. The work in this course is practical, with some theory. Students are advised to take this course who intend to become teachers in secondary schools. Primarily for Juniors and Seniors in the Department of Education, although open to all. Two hours per week. First or second semester. (WEAVER)

FRENCH.

Courses in French are described under the Department of Modern Languages.

GEOLOGY.

Professor Miller.

The department occupies one-half of the second floor of the Natural Science Building. The geological laboratory contains the study collection which consists of representative specimens of fossils and minerals. The mineralogical laboratory is arranged in its furnishings with special reference to its use as a mineral-testing laboratory. The geological

lecture room furnished with folding lecture-room seats, lantern-stand, sliding blackboard, wall screen and means for quickly darkening the room, is admirably adapted to recitation and lecture uses. The collections in mineralogy and paleontology are arranged and classified with special reference to their use in class instruction. As additional equipment, may be mentioned the department library of geological literature, consisting of reports, both state and normal, maps, charts, models, lantern-slides, photographic views, and a rock-slicing-machine. The Department is also fortunate as regards the geological location of the University. Situated in the very heart of the Blue Grass Region, near the base of the geological series of the State, it affords logically the best starting-point for the student of Kentucky geology who would gain a clear comprehension of how the rock foundations of his State have been laid.

The general order in the geological studies is as follows: 1. *Elementary Geology.* 1-a. *Elementary Geology.* 2. *Paleontology.* 3. *Mineralogy.* 4. *Laboratory Physical Geography.* 5. *Advanced Geology.* 6. *Economic Geology.*

1. Elementary Geology. Major geology students take this subject during the Sophomore year. Others may take it as late as the Senior year. Required of all students who are candidates for the degree of B.S., except those for whom 6 is prescribed. Candidates for the degree of A. B. take this course or Astronomy. The attempt is made here to acquaint the student with the general facts and principles which are involved in dynamical, structural, physiographical and historical geology. Two excursions, occupying one day each, are required. Four hours per week. First semester. Repeated second semester.

1a. Elementary Geology. A course in geology for agricultural students. Special emphasis is placed on processes connected with soil formation, rocks in their relation to soils, geological sources of fertilizers, stratigraphy in its relation to soils and fertilizers, the geological formations of Kentucky. Instruction given mainly by lectures, and field excursions. Three hours per week. Second semester.

2. Paleontology. This course should accompany or follow the beginning work in zoology. Lectures on the nature and zoological position of different fossil groups or animals are given, and the student is expected to verify descriptions of fossils by an examination of the specimens themselves and to so learn their peculiarities that he can identify many species and genera at sight. Special attention is paid to

fossils which are important in Kentucky stratigraphy. The collections of the department are well suited for this purpose. The instruction is almost entirely by lecture and laboratory work. Three hours per week. First semester.

3. **Mineralogy.** The object of the study is to render the student familiar with the composition and physical characters of those common minerals likely to be met with both in the course of every-day observation and in geological pursuits. The course involves both laboratory and text-book work. Text and Laboratory Guide: Dana's *Manual of Mineralogy* (The Ford revision). Two laboratory periods per week. Second semester.

4. **Laboratory Physical Geography.** The student is given a series of exercises which involve the interpretation of physiographic structures as revealed in maps, photographs and models; the making of clay and sand models; the construction of weather maps; the practical use of the barometer, compass, clinometer and other instruments required by modern laboratory and field methods in physical geography. Two excursions required. Three hours per week. First semester.

5. **Advanced Geology.** The same topics are treated as in 1, but more thoroughly, as it is fitting such should be treated after the student has had courses 2 and 3 as well as work in other departments which better fit him for an understanding or the deeper problems of geology. Two excursions in the fall and two in the spring required. Text-book: Scott's *Introduction to Geology*. Two hours per week. Throughout the year.

6. **Economic Geology.** As the name indicates, it is the industrial side of geology that is here presented. Historical geology is studied here briefly and in outline. Fossils are considered important only in so far as they serve to determine stratigraphic position of rocks and deposits. Structural geology becomes relatively important and mineralogy and lithology occupy leading places. Some of the topics of economic importance treated are: Common rocks and vein-forming minerals; origin of the ore deposits; mining terms and methods; coal; petroleum; natural gas and asphaltums; building stones; clay and cement; geological fertilizers; relation of geology to agriculture; relation of geology to engineering. Text-books: Ries' *Economic Geology*, supplemented by lectures. Three hours per week. First and second semesters. Repeated second semester.

GERMAN.

Courses in German are described under the Department of Modern Languages.

GREEK.

Professor Terrell.

1. Elementary Course. The beginner's book, drill in forms and the elementary principles of syntax. Four hours per week. First semester.

2. Anabasis. Two books of the Anabasis will be read with exercises in Prose Composition. Four hours per week. Second semester.

3. Anabasis. Four books of the Anabasis will be completed with exercises in Prose Composition. Four hours per week. First semester.

4. Homer. The Iliad, books 1-6. The Homeric Question, Life in the Homeric Age, Mycenaean Antiquities, recent discoveries in Crete, will receive due attention. Exercises in Prose Composition once a week. Four hours per week. Second semester.

5. Plato. The Apology and Crito, selections from the Phaedo, lectures on the relations of Plato to Socrates, Socrates as a moral teacher, and his methods of investigation. Three hours per week, Prose Composition one hour. First semester.

6. Herodotus. Books 6-7. This course will include a rapid survey of Greek history from the Ionic Revolt to the end of the Persian Wars. Three hours per week, Prose Composition one hour. Second semester.

7. Demosthenes. The De Corona. Lectures on the Attic Orators, and a review of Greek history from the accession of Philip to the battle of Chaeronea. Demosthenes' career as statesman and orator will receive careful study. Three hours per week. First semester.

8. Thucydides. Book 4. Lectures on the causes of the Peloponnesian War, Thucydides' style, his preeminence as a historian, and the reading of selections in translation. Three hours per week. Second semester.

9. Tragedy. Sophocles, the Electra; Aeschylus, The Persians. Lectures on the origin and development of tragedy, Aristotle's Poetics, Scenic-Antiquities. Three hours per week. First semester.

10. Comedy. Aristophanes, The Clouds and The Birds. Lectures on Comedy, its place in Greek Life and Politics. Three hours per week. Second semester.

11. Tragedy. Euripides, The Medea and The Ion. Euripides as a forerunner of modern thought will receive special attention. Three hours per week. First semester.

12. Plato. The Republic. This study will include a careful study

of Plato as a man of letters and philosopher. Three hours per week. Second semester.

HISTORY AND POLITICAL ECONOMY.

President Barker, Professor Tuthill, Assistant Professor Butt, Mr. ——

This Department was organized at the opening of the Agricultural and Mechanical College. To the original subjects have been added the newer subjects of Government and Sociology, so that students may secure an introduction to each of the social sciences. These historical and social studies are of great value to persons who intend to pursue professional careers in Law, Commerce, the various branches of the Government Service, Statistics, and some phases of social reform.

Those students who select History as a major will register the first year in History 1. In the Sophomore year they will take History 3. In both Junior and Senior years this Department will prescribe one-third of their work, and will advise another third, thus leaving a portion to the free choice of the students. Moreover, a creditable thesis on some phase of Kentucky history will be required in the Senior year; when accepted, these productions are bound and preserved in permanent form.

The Department is provided with an office and recitation rooms in the Education Building. The University library contains a good file of magazines in certain lines, and is constantly adding by purchase and gift to the reference works now available. The Lexington City Library of 40,000 volumes is also open to our students free of charge.

Prizes are annually offered in History, Economics, Government, and related subjects.

The Department is glad to serve the State by answering inquiries relating to finance, statistics, and social problems. Recent bulletins on the Teaching of History, and on the Condition of the County Infirmaries will be mailed free to applicants.

Friends and Alumni are urged to collect and send for deposit in the Library all account books of plantations, pioneer diaries and letters, manuscripts, and written material of all sorts likely to be useful in preserving the memory of those who have built up the substantial interests of this Commonwealth.

HISTORY.

1. **Ancient History.** To assist the classical student, and lay a good

foundation for a thorough course in European history. Required of those majoring in History. Text, collateral reading, lectures and quizzes. Two hours per week. Throughout the year.
(TUTHILL AND ASSISTANTS)

2. **English History.** An introduction to the serious study of English progress, passing lightly over the earlier centuries in order to emphasize the period since 1485. Recommended to students of literature. Two hours per week. Throughout the year. (TUTHILL)

3. **Medieval History.** More intensive than History 1, comprehending the history of Europe from 395 to 1500, with special attention to the later centuries. Text, syllabus, readings, lectures, and quizzes. Three hours per week. Throughout the year. (TUTHILL)

4. **Modern Europe.** A general survey of modern history, with separate volume on recent events. Three hours per week. Throughout the year. (TUTHILL)

5. **History of the United States.** Beginning with the colonies about 1750, and concluding with a study of the State of Kentucky. Three hours per week. Throughout the year. (TUTHILL)

FOR UNDERGRADUATES AND GRADUATES.

8. **The Teaching of History.** For teachers wishing to learn the more important aids in this field. By arrangement Seniors of the Department of Education are admitted. One hour per week. Second semester.
(TUTHILL)

POLITICAL ECONOMY.

1. **Introduction to Economics.** Not open to Freshmen, and it is advisable that Sophomores consult the Department before registering for this course. Designed to furnish a general view of the field of production and exchange, including a description of the simpler processes of commerce. If necessary, the work of the first semester will be repeated for those entering at mid-year. In two or more sections. Two hours per week. Throughout the year. (TUTHILL, BUTT)

2. **Public Finance.** Designed to explain problems in administration and taxation. Recommended to Sophomores who expect to register for other courses in economics. Two hours per week. First semester.
(BUTT)

3. **Money and Banking.** This course will include a study of the fundamental principles of money and banking in the United States and also a study of the systems in the leading countries of Europe. Three hours per week. Second semester. (TERRELL)

4. **Accounting.** It is expected that the Universlty Auditor will offer a course of lectures in Accounting. If possible, arrangements will be perfected to give credit to those who meet the requirements of the lecturer.

FOR UNDERGRADUATES AND GRADUATES.

For advanced courses in Statistics, and Pools and Trusts, see the announcements of the Graduate School.

POLITICAL SCIENCE.

1. **American Government.** A study of the rights, duties and responsibilities of citizens, with attention to current questions. Prescribed for students in Chemistry, Civil and Mining Engineering, and History. Three hours per week, in two or more sections. Throughout the year. (BUTT)

2. **Municipal Government.** Two objects are sought in this course: (a) an examination of recent tendencies in city government, and (b) an introduction to each of the larger problems of control. Recommended to Seniors in Arts and Law, and to those who complete Political Science 1, or its equivalent. Two hours per week. Second semester. (BUTT)

SOCIOLOGY.

1. **Modern Philanthropy.** The care of the poor in public and private institutions; expenditures and administration of institutions; excursions to public institutions. During the second semester the subject will be Social Problems in Kentucky, viz: child labor, illiteracy, the negro, the agricultural tenant, and other problems of social welfare. (TUTHILL)

2. **Special Problems.** Intensive study of special questions, open only to advanced students.

FOR GRADUATES.

For Graduate courses in the Historical and Social Sciences, see the annonncements of the Graduate School.

ITALIAN.

Courses in Italian are described under the Department of Modern Languages.

JOURNALISM.

Professor Grehan, Miss McLaughlin.

The Department of Journalism was added to the College of Arts and Science by act of the Board of Trustees in June, 1914, and opened September 15, 1914. It is located in the Administration building, floor O, room 7. The space assigned to this department includes two lecture rooms, used also as a laboratory and office.

The lecture room is provided with desks, tables, chairs, telephones, typewriters and reportorial and editorial equipment used in modern daily newspaper offices, and has direct working connection with the printing department of the University. It is supplied with the leading daily and weekly newspapers and other publications of Kentucky and cities of the South and East. In connection with this department students in various classes of journalism and other departments of the University have organized a State Press Association, and through it serve about forty papers throughout Kentucky with news pertaining to State University and allied activities.

The course of instruction covers a period of four years and leads to the degree of Bachelor of Arts in Journalism. Its purpose is to train young men and women in the practical work of Journalism with ample fundamental collegiate instruction as preparatory to the practical phases of the profession.

Students when admitted are classified according to their previous scholastic accomplishments. Every student in Journalism is required to become a member of such literary society of the University as he may elect unless excused for cause by the instructor in charge.

Many of the courses in Journalism being common with the courses in other departments of the University, it will be possible, under certain conditions, for students who have completed two years of University work to continue in candidacy for the A.B. in Journalism.

Applicants for admission to first year classes must be at least 17 years of age. Students who are graduates of accredited schools are admitted without examination, but special students must be twenty years of age and must undergo such examination as may be deemed necessary for admission, by the Committee on Entrance. No student will be admitted after October 15 of the first semester or February 15 of the second semester.

Prizes—Prizes will be awarded for practical work in the second

semesters of second, third and fourth years. These contests will be open to students only of the three classes in Journalism.

Second Year. $5 in gold for best story, minimum 2,000 words, on subject to be assigned.

Third Year. $5 in gold for best description, minimum 5,000 words, of experiment station or agricultural college and story of work accomplished by it that year.

Fourth Year. $5 in gold for best account of convention gathering of State importance, no limit as to words. $10 for best dramatic criticism on performance at Ben Ali Theatre, performance to be indicated by head of department, and review to be written the night of the play and before local papers are issued. $5 for best current news story of spontaneous origin.

University Weekly. At the time this matter was being prepared for the annual catalogue, the authorities of the University had under consideration plans looking toward the publishing of a weekly newspaper devoted to the exploiting of the undeveloped resources of the State with special emphasis on agriculture. These plans contemplate the issuing of this publication through the Department of Journalism, acting in cooperation with the various other departments of the University and the Experiment Station. If these plans are successful students in Journalism will be given additional and ample opportunity to acquire valuable experience in the practical work of journalism and at the same time take advantage of the opportunity, through this medium, to give to the commonwealth service of expanding influence and abiding results.

1. **First Year Journalism.** The work includes elements of newspaper writing, short news stories, "rewrites" from selected newspapers, and work on University publications to the amount of not less than 3500 words. Two hours per week recitation, one hour per week assigned subjects. (McLAUGHLIN)

2. **Second Year Journalism.** This work includes newspaper reporting and correspondence, covering news events of common occurrence, generally of short story and non-sensational type, instruction in how to to find and develope news, including lectures by leading newspaper men of the state when this can be arranged, and work on University and City publications and on assigned subjects to the extent of not less than 5000 words. Two hours per week recitations, one hour per week assigned subjects. Throughout the year. (McLAUGHLIN)

3. Third Year Journalism. This course includes verbal criticism, advanced composition, discussions of best methods of handling news stories, book reviewing, daily market reports, court reports (criminal and civil), athletics, preparation of matter for University publications and daily papers (when acceptable to the latter) to the extent of 20,000 words. This course is subject to modification or elaboration according to the capabilities and accomplishments of students as the work progresses. Three hours per week. Throughout the year. (GREHAN)

4. Fourth Year Journalism. This course gives instruction in preparing copy for weekly University publications, for a theoretical daily paper and includes all class work necessary for the issuing of a daily and weekly, except the actual putting of the matter into type in the former instance. It is designed to give special attention to such phases of newspaper work as comparison and criticism of copy written by various "reporters" and "editors," who will be class members, spelling, sentencing, newspaper style, proofreading, "make up" feature writing, dramatic reviewing, head lining, copy reading, magazine writing, advertising and interviewing. Emergency and special edition work will receive attention during the second semester. Practical talks to reporters with illustrutions will be a feature, using the city and its news centers as laboratories. "Reporters" in this department are required to write not less than 25,000 words and "editors" are required to read in copy not less than 40,000 words during the two semesters. (GREHAN)

OUTLINE OF COURSE LEADING TO THE DEGREE A.B. IN JOURNALISM.

FRESHMAN YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
English 1	105	English Composition	3		1.5
Math. 3, or	123	College Algebra	5		2.5
Chemistry 1, or	97	General Inorganic Chemistry	3	4	2.5
Physics 1	128	General Elementary Physics	4	2	2.5
Latin 5	121	Livy	3		1.5
Greek 1 or	112	Elementary Course	4		2.0
German 1	126	Elementary German	5		1.5
Journalism 1	117	First Year Journalism	2	2	1.5
Military Sci. or		Drill		3	.75
Home Economics		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5
					9.25-10

*A credit represents one recitation or two hours laboratory per week for thirty-six weeks.

SECOND SEMESTER.

English 1	105	English Composition	3		1.5
Math. 2, or	123	Trigonometry	5		2.5
Chemistry 2, or	97	General Inorganic Chemistry	3	6	3.
Physics 2	128	General Elementary Physics	4	2	2.5
Latin 5	121	Horace	3		1.5
Greek 2 or	112	Anabasis	4		2.0
German 1	126	Elementary German	5		1.5
Journalism 1	117	First Year Journalism	2	2	1 5
Military Sci. or		Drill		3	.75
Home Economics		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5
					9.25-10.5

SOPHOMORE YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
English 3	107	History of English Literature	3		1.5
Physiology 1	94	General Physiology	3		1.5
English 26	109	Library Training	2		1.0
English 22	108	Literature of the Bible	2		1.0
Political Economy 2	114	Public Finance	2		1.0
History 1	113	Ancient History	2		1.0
Journalism 2	117	Second Year Journalism	2	2	1.5
Physical Education		Gymnasium or Field Athletics		2	.5
Military Science		Drill		3	.75
					9.75

SECOND SEMESTER.

English 3	107	History of English Literature	3		1.5
Physiology 1	94	General Physiology	3		1.5
English 26	109	Library Training	2		1.0
English 22	108	Literature of the Bible	2		1.0
English 15c	108	Modern Drama	2		1.0
History 1	113	Ancient History	2		1.0
Journalism 2	117	Second Year Journalism	2	2	1.5
Physical Education		Gymnasium or Field Athletics		2	.5
Military Science		Drill		3	.75
					9.75

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
History 5	114	History of United States	3		1.5
Political Economy 1	114	Introduction to Economics	2		1.0
Political Economy 3	114	Money and Banking	3		1.5
Political Science 1	115	American Government	3		1.5
Philosophy 1	127	Logic	3		1.5
Journalism 3	118	Third Year Journalism	3		1.5
					8.5

Second Semester.

History 5	114	History of United States	3		1.5
Political Economy 1	114	Introduction to Economics	2		1.0
Geology 1	110	Elementary Geology	4		2.0
Political Science 1	115	American Government	3		1.5
Philosophy 1	127	Logic	3		1.5
Journalism 3	118	Third Year Journalism	3		1.5
					9.0

SENIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
English 20	107	Principles of Literary Criticism	3		1.5
English 18	108	Victorian Essayists	2		1.0
Journalism 4	118	Fourth Year Journalism	5		2.5
Elective		Law Course Recommended	3		1.5
Journalism	116	Assigned Work	3		1.5
					8.0

Second Semester.

English 20	107	Principles of Literary Criticism	3		1.5
Journalism 4	118	Fourth Year Journalism	5		2.5
Political Science 2	115	Municipal Government	2		1.0
Elective		Law Course Recommended	3		1.5
Journalism	116	Assigned Work	2		1.0
					7.5

LATIN.

Professor Jones.

5. **Livy (Book I); Horace (Odes and Selected Satires).** The work in Livy will include talks on the founding and development of the Roman state, the methods and aims of ancient writers of history as compared with those of today. In Horace careful attention will be given to contemporary history and to all mythological and geographical references. The student will receive daily practice in metrical reading. Three hours per week. Throughout the year.

6. **Tacitus, Terence, Pliny.** Tacitus (Annals—Books I and II); Terence (Phormio); Pliny's Letters (selections). The first half-year is given to reading the Annals. This being the story of an important period in ancient history, due attention will be given to the events themselves as well as to the style of Tacitus. Such subjects are discussed as the founding of the empire, the provincial system, etc. In the second half-year the student will get a general introduction to the dramatic and epistolary literature of the Romans. Talks will be given on the Roman theatre, the influence of Greek literature upon that of Rome, the home and political life of Pliny. Three hours per week. Throughout the year.

7. **Juvenal, Martial, Suetonius.** Juvenal (Selected Satires); Martial (selected Epigrams); Suetonius' Claudius and Nero. These writers will be read for the light they may throw on the political and social life in Rome at the close of the first century as well as for their literary value. Extensive supplementary reading will be required in books which deal with the public and private life of this period. Each member of the class will prepare two papers on assigned subjects. Three hours per week. Throughout the year.

8. **Plautus, Virgil, Cicero.** Plautus (Captives and Trinummus); Virgil (Georgics and selections from the last six books of the Aeneid); Cicero (selected Letters). In reading the plays of Plautus some attention will be given to the development of the drama at Rome, and also to the influence of Plautus on Modern Comedy. The last half of the year is given to reading Virgil and Cicero. This is mainly for the benefit of students who expect to teach Latin in Secondary Schools. Talks will be given on methods of teaching Latin, the course of study, equipment, etc. Two hours per week. Throughout the year.

9. **Cicero and Virgil.** Five orations of Cicero and five books of Virgil's Aeneid will be read. Exercises in Prose Composition. Other

authors may be read instead of these, as for instance Sallust and Ovid, depending on the requirements of the class. Four hours per week. Throughout the year.

10. Elementary Latin. The first half-year will be devoted to a thorough drill in the elements of Latin—declension, conjugation, simple rules of syntax. During the second half-year easy fables and selections from Caesar's Gallic War will be read. Five hours per week. Throughout the year.

Courses 9 and 10 are for those students who are accredited to the Freshman class but have never had Latin or have had an insufficient amount to admit them to Latin 5. University credit allowed for this work to students who offer 15 units of entrance.

PRIMARILY FOR GRADUATES.

For courses scheduled primarily for graduates, see the statement of the Graduate School.

MATHEMATICS AND ASTRONOMY.

Professor Boyd, Professor Davis, Associate Professor Rees, Assistant Professor Downing, Mr. Hollcroft, Mr. Gordon, Mr. Park, Mr. Watkins.

MATHEMATICS.

Students planning to teach High School mathematics should consider courses 1 to 5 inclusive, the minimum preparation for such work. Major students in mathematics are expected to take courses 1, 2, 3, 4, 5, 6, 7 and 8 [or 9 and 10], 11 [or 12], Astronomy 1, one year of College Physics, two years of German, and one year of French. The aim is to give the best possible equipment, both for teaching and for graduate work. Graduate students will find sufficient advanced work regularly given to occupy their time, as a major, for at least two years. The White Mathematics Club meets weekly for the study of some book of general interest and for the presentation of special topics. Juniors and Seniors majoring in mathematics are expected to attend regularly. The department has a room in the basement of the Library where the mathematics and astromony reference books and magazines are kept.

FOR UNDERGRADUATES.

1. Solid Geometry. This is given primarily for Engineering Students who enter conditioned in it. It is a prerequisite for second semester

Analytics. Students not needing the course for entrance, will be allowed three fifths the usual credit. Text: Hart anb Feldman's *Solid Geometry*. Five hours per week. First semester. (PARK)

2. **Plane Trigonometry.** A thorough course in Plane Trigonometry supplemented by enough Algebra to fill out a semester's work. Text: Kenyon and Ingold's *Plane Trigonometry* and Rietz and Crathorne's *College Algebra*. Five hours per week. First semester. Repeated second semester. (BOYD, DAVIS, REES, DOWNING, ASSISTANTS)

2a. **Plane Trigonometry.** A brief course for Agriculture students. The work covers solution of triangles with applications to surveying. Three hours per week. First semester. Repeated second semester. (BOYD, PARK, WATKINS)

3. **College Algebra.** Elementary algebra is first reviewed in a way to give greater clearness as to assumptions, the number concept and the functional idea, and to introduce graphs and determinants. Following this, topics are taken up that will, together with those included in courses 2 and 4, furnish the student with a fairly complete view of the subject. Text: Rietz and Crathorne's *College Algebra*. Five hours per week. First semester. Repeated second semester. (BOYD, DAVIS, REES, DOWNING, ASSISTANTS)

4. **Analytic Geometry.** A somewhat extended course in Plane and Solid Analytics running through the entire year. Certain topics usually given in algebra are reserved for treatment here, where their meaning and usefulness are more apparant. The idea of the derivative is introduced in finding the slope of a curve. Text: Ziwet and Hopkin's *Analytic Geometry*. Prerequistes, 2 and 3; for second semester, 1 also. Five hours per week. Throughout the year. (DAVIS, REES, DOWNING)

4a. **Analytic Geomertry** This is the same course as 4, but it begins with the second semester and runs through the first semester of the following year. Students failing in the first semester of 4 will be transferred to this class for the second semester. Five hours per week for a year, beginning with second semester. (DOWNING, HOLLCROFT)

5. **Differential and Integral Calculus.** This course is designed especially for Engineers, though open to all. It begins with the second semester of the Sophomore year and runs through the first semester of the Junior year. Prerequisites, 2, 3, and first semester of 4; for the second half of the course, the second semester of 4 also. Text: Granville's *Differential and Integral Calculus*. Five hours per week for a year, beginning with the second semester. (DAVIS, REES, DOWNING)

5a. Differential and Integral Calculus. Designed primarily for Arts and Science students. It begins with the first semester and runs through the year. Students failing in the first part of course 5, will be transferred to 5a the following Fall. Prerequisites the same as for 5. Five hours per week. Throughout the year. (BOYD)

6. Spherical Trigonometry; Method of Least Squares. This course is required of Civil Engineers and students majoring in mathematics. Two hours per week. Second semester. (DOWNING)

FOR UNDERGRADUATES AND GRADUATES.

7. Graphical Analysis and Determinants. A study by graphical methods of the fundamental principles of analysis, and presentation of the elements of curve tracing. This is followed by a brief course in determinants. Given by lectures. Omitted 1914-15; to be given in 1915-16. Three hours per week. First semester. (REES)

8. Vector Analysis. A thorough study of the algebra of vectors with numerous applications of line geometry and solid analytics. Also a brief introduction to the calculus of vectors with applications to differential geometry, mechanics, and physics. Text: Gibbs-Wilson's *Vector Analysis.* Text to be supplemented by lectures. Given 1913-14; omitted in 1914-15; to be given in 1915-16. Three hours per week. Second semester. (REES)

9. Theory of Equations. An introductory course given chiefly by lectures and based on some standard text. Given in 1914-15; to be omitted in 1915-16. Three hours per week. First semester. (REES)

10. Advanced Analytics. This course is designed to present the extended theory connected with conic sections and to serve as an introduction to a later course in the general theory of algebraic curves. Text: C. Smith's *Conic Sections.* Given in 1914-15; to be omitted in 1915-16. Three hours per week. Second semester. (REES)

11. Differential Equations. A study of the theory of ordinary and partial differential equations, with applications to physics and mechanics. Text book work supplemented by lectures and reports. Text: Cohen's *Differential Equations.* Omitted in 1914-15; to be given in 1915-16. Three hours per week. Throughout the year. (DAVIS)

12. Advanced Calculus. A second course in calculus affording a more critical view of the fundamental notions and theories, and including the study of elliptic integrals and functions defined by definite integrals. The work will be based on the texts of Byerly and William-

son. Given in 1914-15; to be omitted in 1915-16. Three hours per week. Throughout the year. (DAVIS)

13. Projective Geometry. This course provides a study of the content and methods of modern synthetic geometry, and is also designed to serve as an introduction to a later course in geometric transformations. Text: Cremona's *Elements of Projective Geometry* offered for 1915-16. Two hours per week. Throughout the year. (BOYD)

14. Teacher's Course. Given in 1914-15. Two hours per week. First semester. (BOYD)

FOR GRADUATES.

For courses scheduled primarily for graduate students, see statement of Graduate School.

ASTRONOMY.

1. General Astronomy. A general view of the subject is given by text-book and lectures and frequent use of an 18-inch celestial globe. Class-room work is supplemented by the identification of the principal constellations and by the use of the 8-inch refracting telescope in the observatory. Text: Young's *Manual of Astronomy*. Four hours per week. First semester. (DOWNING)

2. Practical Astronomy. A second course in which will be considered such problems as the computation of latitude, longitude, eclipses and occultations, and the preparation of star lists. Three hours per week. Second semester. (DOWNING)

MODERN LANGUAGES.

Professor Zembrod, Professor Melcher, Miss Chorn, Mr. Cannon.

The Department of Modern Languages offers a four year course in the German Language and Literature; a three year course in the French Language and Literature; and a course of one year in Spanish and Italian.

GERMAN.

A knowledge of the grammar and the ability to read and translate easy German at sight, and also simple English into German, is required of students who take German 3, i. e. Freshman work. At least two years are required in this preparation.

Students who qualify for the Freshman class, but who are deficient

in German, may take work in classes, designated below as 1 and 2. In these classes five recitations per week are required to equal three per week in the University in estimating credits.

1. **Elementary German.** First Semester: Grammar followed by easy reading to acquire vocabulary and illustrate grammatical principles. Second Semester: Rapid reading of easy texts and composition based on texts read. Class is divided into four sections. Five hours per week. Throughout the year. (MELCHER, CHORN, CANNON)

2. **Prose Reading.** First Semester: Intermediate German with grammar drill and composition based on text. Second Semester: Selections from prose and poetry committed; conversations and compositions based on text read. Class is divided into four sections. Five hours per week. Throughout the year. (MELCHER, CHORN, CANNON)

3. **Composition and Reading.** First Semester: *Materials for sight Translation and Conversation,* by French or similar text, followed by rapid reading. Second Semester: Studies in Schiller or equivalent work. Prerequisite, German 1 and 2. Class divided into three sections. Three hours per week. Throughout the year. (MELCHER, CHORN, CANNON)

4. **Advanced Reading and Composition.** First Semester: Wiehr's *German Prose Composition* and such texts as *Der Fluch der Schoenheit, Die Psyche,* etc. Second Semester: Reading continued; part of sipmle play committed for class room; essays on subject matter of texts from reproduction. Class is divided into three sections. Three hours per week. Throughout the year. (MELCHER)

5. **The Drama.** Junior course. First semester: Composition and Conversation. Second semester: Goethe's and Schiller's Ballads. Two dramas from Grillparzer or their equivalent. Three hours per week. Throughout the year. (ZEMBROD)

6. **Novel and Drama.** Senior course. First semester: Novel, Drama and Composition. Second semester: work of first continued. Three hours per week. Throughout the year. (ZEMBROD)

FRENCH.

1. **Elementary French.** First and second semesters. *Fraser and Squair's Grammar;* Elementary French Reader; Verne's *Michel Strogoff.* Class divided into two sections. Three hours per week. Throughout the year. (CHORN)

2. **Reading and Composition.** *Fraser and Squair's Grammar.* French Prose of the 19th Century. Three hours per week. Throughout the year. (ZEMBROD)

3. Advanced Reading and Composition. First semester: selections from XVIIth Century-Moliere, Racine and Corneille. Second semester: continuation of work of first semester. Three hours per week. Throughout the year.
(ZEMBROD)

ITALIAN.

1. Elementary Course. *Grandgent's Grammar;* Bowen's *Elementary Reader,* Conversation and Composition. For Juniors only. Five hours per week. Second semester.
(ZEMBROD)

SPANISH.

1. Elementary Course. *Hills and Ford's Grammar;* Elementary Reader, Spanish Tales. For Juniors only. Five hours per week. First semester.
(ZEMBROD)

PHILOSOPHY.

Professor Tigert.

The Department of Philosophy offers courses of study in the following subjects: Logic, Psychology, Philosophy, Ethics, and Esthetics.

1. Logic. This course is primarily intended as a complete exposition of scientific methods, deductive and inductive. The course in Deduction will be pursued during the first semester and a course in Induction during the second semester. Considerable attention is given to the practical application of the theory of Logic, and Praxis is emphasized throughout the course. At least two courses in English are prerequisite for this work. This course is required for all Juniors in the College of Arts and Science. Text Book: Creighton's *Introductory Logic.* Three hours per week. Throughout the year.

2. History of Philosophy. This course gives the student a comprehensive survey of the orientation of philosophical thinking from the Ionian School to the present. The ancient Philosophy is emphasized and completed in the first semester. The second semester will be given up mainly to the modern Philosophy, little time being given to the Mediaeval period and Scholasticism. An effort is made to bring students in contact with the sources. The general aim is to lay the foundation for more advanced courses in Philosophy. Text books: Roger's *Student's History of Philosophy;* Bakewell's *Source Book of Ancient Philosophy;* Rand's *Modern Classic Philosophers.* Three hours per week. Throughout the year.

3a. Ethics. This is a study of the first principles of moral science and undertakes the exposition of the principles of right and wrong, endeavoring to make a practical application of these. Virtues and duties are defined and discussed. Text book: Paulsen's *System of Ethics.* Three hours per week. First semester.

3b. Esthetics. This course undertakes a thorough survey of the philosophy of beauty including the esthetics of sensation, the emotions, the principles of the fine arts, sculpture, painting, etc. Three hours per week. Second semester.

Courses 2 and 3 are elective for Seniors who have completed course 1, and for all students of A Grade who are pursuing course 1.

ADVANCED COURSES.

4. Metaphysics and Epistemology. This work is designed for those who desire to do extensive work in philosophy, and it is essential that students shall have completed one or more of the elementary courses before undertaking it. The student is introduced to the central problems of philosophy. In the first semester the problems of metaphysics are taken up. The ontological doctrines of materialism, idealism and dualis are studied and criticized together with the chief cosmological theories. In the second semester the main problems concerning the nature and origin of knowledge are examined with the view of forming a clear and consistent theory of knowledge. Students will be required to read the sources in connection with lectures. Text book: Paulsen's *Introduction to Philosophy.* Three hours per week. Throughout the year.

5. Psychology. This course is intended for students who have completed the elementary course in Psychology (Education 3). During the first semester the work is confined largely to experimentation. The experiments are based on the work done in the elementary course. In the second semester some of the chief problems of abnormal psychology are discussed, including such as the occult sciences, hypnotism, the psychology of deception, lunacy, etc. Recitation, one hour per week; laboratory, four hours per week. Throughout the year.

PHYSICS.

Professor Pence, Professor Webb, Associate Professor Killebrew, Mr. Bitner, Mr. Kelly.

The Department of Physics occupies the southern half of the new three-story brick building, planned and constructed to meet the needs of this department and the College of Civil Engineering.

On the first floor are the main office, two large laboratories for advanced work in General Physics and in Heat, a small laboratory, an apparatus room, photographic rooms, and a study room for girls.

On the second floor are situated a large laboratory for elementary work, a reading room, the main apparatus room, and the principal lecture room. The lecture-table is supplied with water, gas, direct and alternating currents, vacuum, and compressed air. A projection outfit has been installed for picture projection and to show refraction, diffraction, interference, polarization, spectra, etc. Stone shelves project externally from some of the windows of this room and other rooms in the building to receive instruments for experimentation with sunlight.

On the third floor are two rooms for lectures and recitations, an office, an optic room, an apparatus room, a store-room, and photographic room.

The basement (as yet in the main unfinished) is well lighted, and has splendid work rooms, all to be finished with concrete floors, giving stability for precision measurements. There are two large rooms for laboratory purposes, a battery room, and a work shop. At present the shop contains the experimental switchboard, a motor ($7\frac{1}{2}$ h. p.)-generator (5 kw. 125 v.), a smaller motor-generator, tanks for vacuum and compressed air, a compression and exhaust pump driven by an electric motor. A two-wire circuit and a three-wire circuit (partly installed) will extend from the switchboard through pipe conduits to every work room.

The building has a private telephone system and a hoist for apparatus.

1. **General Elementary Physics.** For students who have had no previous training in Physics. Elective for Arts students. Course covers the elementary theory of Mechanics, Sound and Heat, particular attention being given to the solution of appropriate problems. Each student is required to perform, and reports on, 25 laboratory exercises. Text-book: Gage's *Principles of Physics* by Goodspeed. 2.5 credits. Lectures and recitations four hours, laboratory two hours per week. First semester. (KILLEBREW, BITNER)

1a. **General College Physics.** For Sophomores in Science and Civil Engineering. Prerequisites, one year of High School Physics, Mathematics 2 and 3, and Physics 3 or 4. Should be accompanied by Physics 5a. Course covers the general theory of Mechanics, Sound and Heat, including the solution of many problems. Text-book: *Kimbal's College Physics*. 1.5 credits. Lectures and recitations three hours per week. First semester. (PENCE, WEBB, KELLY)

1b. General College Physics. For Sophomore Mechanical and Mining Engineering students. Prerequisites, same as 1a. Should be accompanied by 5b. Lectures, recitations, and problems in Mechanics, Sound, and Heat, especial attention being given to mathematical deductions. Text-book: *Duff's Text-book of Physics.* 2 credits. Four hours per week. First semester.

(PENCE, KILLEBREW, WEBB, BITNER, KELLY)

2. General Elementary Physics. This is a continuation of Physics 1. Course covers the elementary theory of Light, Electricity, and Magnetism with problems. Each student is required to perform and report on 25 additional laboratory exercises. 2.5 credits. Lectures and recitations four hours, laboratory two hours per week. Second semester.

(KILLEBREW, BITNER)

2a. General College Physics. This is a continuation of 1a. Should be accompanied by Physics 6a. Course covers the general theory of Electricity and Magnetism, and Light. 1.5 credits. Lectures and recitations three hours per week. Second semester. (PENCE, WEBB, KELLY)

2b. General College Physics. This is a continuation of 1b. Should be accompanied by Physics 6b. 2 credits. Lectures, recitations and problems in Electricity and Magnetism and Light. Four hours per week. Second semester. (PENCE, KILLEBREW, WEBB, BITNER, KELLY)

3. Elementary Physical Measurements. For Freshmen in Science and Civil Engineering. Laboratory work accompanied by recitation periods. Departmental notes, used as laboratory manual. 1 credit. Four hours per week. First semester. (KILLEBREW, BITNER)

4. Elementary Physical Measurements. For Freshmen in Mining and Mechanical Engineering. Laboratory work accompanied by recitation periods. Departmental notes used as laboratory manual. 1 credit. Four hours per week. Second semester. (KILLEBREW, BITNER)

5a. Measurements in Mechanics and Heat. For Sophomores in Science and Civil Engineering. Perequisites, Physics 3 or 4 and credit in or the simultaneous study of Physics 1a. Laboratory work, accompanied by recitation. Text-book: *Mechanics, Molecular Physics and Heat* by Millikan. 1 credit. Four hours per week. First semester.

(WEBB, KELLY.)

5b. Measurements in Mechanics and Heat. For Sophomore Mechanical Engineers. Prerequisites, Physics 3 or 4 and credit in or the simultaneous study of Physics 1b. Laboratory work, accompanied by recitation periods; special attention being given to appropriate problems. Text-

book: *Mechanics, Molecular Physics and Heat* by Millikan. 1.5 credits. Laboratory four hours, recitation one hour per week. First semester. (WEBB, KELLY.)

6a. Measurements in Electricity, Sound and Light. For Sophomores in Science and Civil Engineering. Prerequisites, Physics 3 or 4, and credit in or the simultaneous study of Physics 2a. Laboratory work, accompanied by recitation periods. Text-book: *Electricity Sound and Light* by Millikan and Mills. 1 credit. Four hours per week. Second semester. (WEBB, KELLY.)

6b. Measurements in Electricity, Sound and Light. For Sophomore Mechanical Engineers. Prerequisites, Physics 3 and 4, and credit in or the simultaneous study of Physics 2b. Laboratory work, accompanied by recitation periods, special attention being given to appropriate problems. Text-book: *Electricity, Sound and Light* by Millikan and Mills. 1.5 credits. Laboratory four hours, recitation one hour per week. Second semester. (WEBB, KELLY.)

7. Theory of Heat. For students whose major is Physics, elective for others. Prerequisites, Physics, 1a or 1b. Text-book: Edser's *Heat for Advanced Students*. 1.5 credits. Lectures and recitations. Three hours per week. First semester. (PENCE, WEBB)

8. Electricity and Magnetism. For students whose major is Physics; elective for others. Prerequisites, 2a or 2b. Text-book: Hadley's *Electricity and Magnetism*. 1.5 credits. Lectures and recitations. Three hours per week. Second semester. (PENCE, WEBB)

9. Theory of Light. For students whose major is Physics, elective for others. Prerequisites, Physics 1a or 1b. Text-book: Edser's *Light*. 1.5 credits. Lectures and recitations three hours per week. First semester. (WEBB, KILLEBREW)

10. Household Physics. For Sophomores in Home Economics. No previous training in physics required. 1.5 credits. Lectures and recitation, three hours per week, laboratory two hours per week. Second semester. (WEBB, BITNER)

FOR GRADUATE AND ADVANCED STUDENTS.

12. Advanced Theory of Electricity and Magnetism. Prerequisites, Physics 8 and Mathematics 5, or equivalent. 1.5 credits. Lectures and recitations three hours per week. Either semester. (KILLEBREW)

14. Physical Optics. Prerequisites, Physics 9 and Mathematics 5 or equivalent. Text-book: Wood's *Physical Optics.* 1.5 credits. Lectures and recitations three hours per week. Either semester. (WEBB)

15. Measurements in Optics. Should accompany or follow Physics 14. Text-book: *Manual of Advanced Optics*—Mann. Laboratory work from four to six hours per week. Either semester. (WEBB)

16. Kinetic Theory of Gases. Lectures and recitations three hours per week. Either semester. (WEBB)

18. Advanced Theoretical Mechanics. Lectures and recitations three hours per week. Either semester. (KILLEBREW)

OUTLINE OF COURSE LEADING TO THE DEGREE B.S. MAJOR PHYSICS.

FRESHMAN YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
English 1	105	English Composition	3		1.5
Mathematics 2	123	Trigonometry	5		2.5
German 1	126	Elementary German	5		1.5
History 1	114	Ancient History	3		1,5
Chemistry 1	97	General Inorganic Chemistry	4	2	2.5
Military Sci. or Home Economics		Drill		3	.75
		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5
					10.75 or 11

SECOND SEMESTER.

English 1	105	English Composition	3		1.5
Mathematics 3	123	Algebra	5		2.5
German 1	126	Elementary German	5		1.5
History 1	114	Ancient History	2		1.0
Chemistry 2	97	General Inorganic Chemistry	4	2	2.5
Physics 4	130	Physical Measurements		4	1.1
Military Sci. or Home Economics		Drill		3	.75
		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5
					11.25 or 11.50

*A credit represents one hour of recitation or two hours of laboratory per week for thirty-six weeks.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Physiology 1	94	General Physiology	3		1.5
Mathematics 4	123	Analytical Geometry	5		2.5
German 4	126	Advanced Reading	3		1.5
Physics 1a	127	General College Physics	3		1.5
Physics 5	130	Physical Measurements		4	1.0
Zoology 9	157	General Zoology	1.5	1.5	1.1
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5
					10.35

Second Semester.

Physiology 1	94	General Physiology	3		1.5
Mathematics 4	123	Analytical Geometry	5		2.5
German 4	126	Advanced Reading	3		1.5
Physics 2a	130	General College Physics	3		1.5
Physics 5	130	Physical Measurements		4	1.0
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5
					9.25

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Mathematics 5	123	Differential Calculus	5		2.5
Physics 6	131	Electrical Measurement		4	1.0
Physics 7	131	Theory of Heat	3		1.5
Chemistry 4	97	Qualitative Analysis		6	1.5
Electives		Electives			2.5
					9.0

Second Semester.

Mathematics 5	123	Integral Calculus	5		2.5
Physics 6	131	Electrical Measurements		4	1.0
Physics 8	131	Electricity and Magnetism	3		1.5
Mathematics 6	123	Spherical Trigonometry	2		1.0
Chemistry 8	98	Quantitative Analysis	1	8	2.5
					8.5

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Mathematics 11	124	Differential Equations	3		1.5
Geology 1	110	Elementary Geology	4		2.0
Physics 9	131	Theory of Light	3		1.5
Astronomy 1	125	General Astronomy	4		2.0
Thesis		Thesis			
					7.0

SECOND SEMESTER.

Mathematics 11	124	Differential Equations	3		1.5
Physics 18	132	Theoretical Mechanics	3		1.5
Philosophy 16	128	Introduction to Philosophy	3		1.5
History 4	114	Modern Europe	2		1.5
Thesis		Thesis			
					5.5

POLITICAL ECONOMY AND POLITICAL SCIENCE.

Courses in these subjects are described under the Department of History and Political Economy.

SOCIOLOGY.

Courses in Sociology are described under the Department of History and Political Economy.

SPANISH.

Courses in Spanish are described under the Department of Modern Languages.

COLLEGE OF AGRICULTURE.

JOSEPH H. KASTLE, DEAN.

ORGANIZATION.

The College of Agriculture includes:

The Experiment Station.
The School of Agriculture.
The School of Home Economics.
The School of Agricultural Extension.
The School of Veterinary Science.

The work of the College of Agriculture is conducted along the following lines:

1. Research: having for its object the scientific study and investigation of all problems that in any way affect the agricultural interests of the State.
2. Instruction in agriculture and related subjects to students of the University.
3. Extension: to disseminate agricultural information to citizens of the State.
4. Inspection.

COURSES OF INSTRUCTION.

The following courses have been arranged to meet the needs of students enrolled in the College of Agriculture:

1. Graduate Work in Agriculture.

In the School of Agriculture and in the Experiment Station, excellent opportunities are afforded the student to do post-graduate work in the following subjects: Soil fertility, soil physics and farm crops, dairying and poultry husbandry, animal nutrition and the feeding of livestock, the study of market classes of beef cattle, sheep and swine, agricultural chemistry, entomology, seed analysis and plant breeding, the cultivation, curing and grading of tobacco, food and drug technology, bacteriology and animal pathology, including studies in immunity, hog cholera, etc.

The Experiment Station is the Research Department of the College of Agriculture. As such it offers excellent opportunities for graduate students. Deserving students who have graduated from the College of Agriculture are given every opportunity to pursue some special line of work in the Experiment Station, where they will come in contact with investigators in the sciences pertaining to agriculture. The graduate student in agriculture may select any one of the above subjects as a major study leading to the degree of Master of Science in Agriculture, subject to the approval of the Faculty of the College of Agriculture. One or more minor subjects will be assigned by the Executive Committee of the Graduate School. At least one year's resident work at the University will be required of candidates for the degree of Master of Science in Agriculture. Thirty days before the close of the academic year, the candidate for this degree will be required to submit to a committee, consisting of the Dean of the College of Agriculture and the professors under whom the candidate has done his work, a typewritten copy of a thesis on some subject previously assigned by this committee. The candidate for the degree of Master of Science in Agriculture will also be required to pass satisfactory examinations in his major and minor subjects.

2. **Undergraduate Work in Agriculture.**

a. Four Years Course in Agriculture. The regular course in agriculture continues four years and leads to the degree of Bachelor of Science in Agriculture. This course offers opportunity to specialize in agronomy, agricultural chemistry, animal husbandry, bacteriology, botany, dairying, entomology, horticulture, or zoology.

b. Four Years Course in Home Economics.

c. Two Years Course in Veterinary Science.

3. **Extension Courses.**

The Agricultural Experiment Station.

The Agricultural Experiment Station has for its object the investigation of agricultural problems of special interest to the Kentucky farmer and the discovery of new truths in those sciences related to agriculture.

As at present organized, the Station includes twelve departments of work, namely: Administration; Agronomy, or the study of soils and crops; Animal Husbandry, including (1) beef cattle, sheep, and swine, and (2) horses, poultry, dairy cattle and dairying; Chemistry, including

the analysis of soils, mineral waters, phosphates, limestones, etc.; Entomology and Botany, including the study and identification of destructive insects and fungus species and their eradication and control by spraying, etc., together with the study of the native plants of the State, acclimation of new varieties of plants, etc.; Feeds and Feeding Stuffs; Commercial Fertilizers; Food and Drugs; Horticulture, including orcharding, cultivation under glass, and market and landscape gardening; Research; Agricultural Extension, including corn shows, agricultural schools and clubs, farmers' institutes, press bulletins on agricultural topics and, indeed, all those agencies by which the work of the Station and of the United States Department of Agriculture is brought directly to the farmers in various sections of the State.

Among the investigations recently carried out at the Kentucky Agricultural Experiment Station and on the experimental farm, may be mentioned the following:

Studies on the cultivation of corn, wheat, oats, barley, sweet clover, soy beans; the soiling of crops as compared with pasturage; crop rotations suitable to several types of Kentucky soils; tobacco investigations; infectious abortion in mares and the isolation of the micro-organism responsible for this disease; cerebro-spinal meningitis in live stock; extensive studies in pig feeding; a study of the inherited characteristics in horses and jacks, and the inheritance of coat colors in horses; the construction and equipment of dairy barns; experiments with a mechanical milker; the life-history of the corn-ear worm and cross inoculation with nodule bacteria of leguminous plants; a botanical study of the woody plants of Kentucky, and of some Kentucky weeds and poisonous plants; a study of a new parasite on the San Jose scale; an investigation of slaughter-houses and plans of a model municipal abattoir; fodder poisoning; hog cholera and its control; the sulphur content of typical Kentucky soils; clover bloat in cattle, etc. Bulletins on these subjects may be had on application to the Director.

The Station is also charged with the administration of the State laws governing the manufacture and sale of commercial fertilizers, feeds and feeding stuffs, foods and drugs, and for a number of years these laws have been administered in such a way as to protect the interests of the manufacturer and the consumer alike, and with the view of safeguarding the public against fraud in the sale and distribution of these various articles. The work incident to the enforcement of the nursery inspection law and of the seed inspection law is also carried out at the Station. The cleaning of tobacco seed, the distribution of burley tobacco

seed and of the seed of other varieties of plants especially adapted to the agricultural conditions of the State, the production of large amounts of hog cholera serum and its distribution at less than the cost of production, the vaccination and inoculation of hogs against cholera, without expense to the owner, the vaccination of cattle against blackleg, the tuberculin testing of dairy cattle, the organization of dairy testing associations in various parts of the State, the supervision of the construction of silos and dairy barns, may be enumerated among the many activities of the Station, looking to the development of a more permanent and remunerative system of agriculture throughout the State.

Finally, it may be said that the Station affords excellent opportunities for graduate students in agriculture and offers many advantages to young men and women who desire to perfect themselves in one or more branches related to agriculture.

School of Agriculture.

EQUIPMENT.

The Agricultural Building, which was erected in 1907-'08 is located upon the southwest corner of the University campus and is a structure 45x100 feet in size, three stories in height above a roomy basement, and is designed as a wing of a much larger structure which the growing interest in agricultural education will probably necessitate in the near future.

The construction is of the most thorough and substantial character, the materials being native limestone for the foundation, with Maysville pressed brick and Bedford stone for the superstructure. The basement contains two dairy laboratories, a potting and propagating room, together with space for the heating plant. Upon the first floor is the office of the professors of horticulture and botany, adjoining which is a private laboratory, and nearby are the department lecture room and general advanced botanical laboratories.

Upon the second floor are the offices of the professors of animal husbandry, a lecture room for animal husbandry and a laboratory for bacteriology, together with an attractive reading room provided with fireplace and mission furnishings. A large number of the best agricultural and other periodicals are kept here on file at the service of the students of the College.

The third floor is occupied mainly by the Department of Agronomy, and includes a well-lighted lecture room, a well-equipped soil physics and soil fertility laboratory, and a room for laboratory work in farm crops.

This floor also contains a photographic laboratory, with dark rooms. This laboratory has a superior equipment for the preparation of lantern slides and enlargements for the use of the various departments, and for the illustration of these and other studies prosecuted in the College of Agriculture.

The lecture rooms in the building are provided with opera chairs, electric projection lanterns, and other appliances for illustrative and demonstrative purposes.

The laboratories for agronomy and bacteriology are large and abundantly lighted and suitably equipped with gas, water and electric current for carrying on the work of these departments. The laboratories for botany and bacteriology are provided with individual tables, with the most approved forms of microscopes, microtomes, incubators, and sterilizing apparatus, balances, charts, etc., in accordance with their several requirements.

All the rooms are exceptionally well lighted with large windows, and by night with both gas and electric lamps. Every room is also provided with ventilating shafts for insuring a constant change of air.

Adjoining the building on the rear is a laboratory greenhouse, 24x 50 feet in size, for the use of classes in botany, horticulture, and other studies involving experimental work with living plants.

For botanical instruction there is also an extensive herbarium which contains a nearly complete representation of the flora of Kentucky, together with a large number of foreign exchanges. This is due primarily to the efforts of the late Dr. Robert Peter, who made an extensive collection of Kentucky plants about seventy years ago, and also exchanged specimens with the prominent botanists of that day, thus forming the nucleus of the present collection, which therefore possesses considerable historic value.

Among the additional facilities for agricultural instruction there is installed in the basement of the Civil Engineering building a growing collection of the best farm implements and machinery, most of which has been loaned or donated by the manufacturers.

In the Department of Entomology and Zoology, most of the instruction is given in the laboratories and lecture rooms on the first floor of the Natural Science building. The laboratories are provided with tables, compound microscopes, rearing cages, aquaria collections, and other illustrative material. The lecture room is equipped with a good lantern, lantern slides, charts for showing insect structure, and other conveniences for presenting features of the subjects that can not conveniently

be studied in laboratories. Spraying apparatus of various sorts is provided for illustration from the equipment of the Station.

The equipment of the Department of Entomology and Botany of the Station, available under certain restrictions to advanced students, is of the best that can be procured, and includes an insectary with hothouse, microscopes, microtomes, incubators, extensive collections, and a good working library, containing many of the serials and other works relating to entomology.

ENTRANCE REQUIREMENTS.

For admission as Freshman to this College, an applicant must offer 15 units of credit as indicated on page 45 of this catalogue. For further details regarding entrance requirements, see General Information.

REQUIREMENTS FOR GRADUATION.

To receive the undergraduate degree, a matriculate in the College of Agriculture must offer 69 credits, inclusive of those required in Military Science and Physical Training. Men are required to offer three credits in Military Science and two in Physical Training, and women two in Physical Training.

The term "credit hour," or "credit," is defined as the satisfactory completion of a study involving lectures and recitations for one hour per week for one year, or laboratory work or practicum for two hours per week for the same period.

Military Science and Physical Training are classed as laboratory work.

In estimating the credit value of a study pursued for only one semester, the number of hours per week the subject is given is multiplied by .5. Credit will not be allowed students for summer work except by special arrangement in advance with the head of a department.

Persons excused from Military Science or Physical Training for disability or any other cause, unless when they entered they brought credits in the subjects from some other institution, must offer an equivalent number of credits in some other subject or subjects.

No student in the College of Agriculture will be permitted to take more than 19 hours work per week, exclusive of Military Science and Physical Training, except by special permission of the faculty of the College of Agriculture.

Not more than 3 credits will be allowed for thesis work. In case a student is assigned thesis work, the subject for the thesis must be assigned by the first of June of the Junior Year, and all theses must be

completed and handed in for inspection before May fifteenth of the Senior Year.

All candidates for the degree of Bachelor of Science in Agriculture must, by the beginning of the Junior year, select a major study in one of the departments of the College of Agriculture. In the schedule of studies given below, courses required for graduation are starred. All other subjects are electives, under the advice and direction of the professor in charge of the work which the student may select as his major study, subject to the approval of the Dean. At least one-half of the electives are to be taken from courses in the College of Agriculture.

OUTLINE OF COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE.

FRESHMAN YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits †
*Animal Husb. 1	148	Elementary Study of Stock Judging and Study of Breeds	3	2	2.0
*Botany 1	152	General Morphology	2	4	2.0
*Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
*English 1	105	English Composition	3		1.5
French 1	126	French Grammar	3		1.5
German 1 or 3	126	Ele. Ger. or Composition and Reading	3		1.5
History 1	113	Ancient History	2		1.0
*Mathematics 2a	123	Trigonometry	3		1.5
Military Science		Drill		3	.75
Physical Educ'tion		Gymnasium or Field Athletics		2	.5

Second Semester.

*Agronomy 7	145	Elementary Agronomy	2		1.0
*Botany 1a	152	Morphology and Classification of the Seed Plants	2	4	2.0
*Chemistry 2	97	Chemistry of the Metals	3	6	3.0
*English 1	105	English Composition	3		1.5
French 1	126	French Grammar	3		1.5
German 1 or 3	126	Ele. Ger., or Composition and Reading	3		1.5
History 1	113	Ancient History	2		1.0
Military Science		Drill		3	.75
Physical Educ'tion		Gymnasium or Field Athletics		2	.5

*Required subjects.

†A credit represents one hour of recitation, or two hours of laboratory, per week for thirty-six weeks.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits †
*Agronomy 8	145	Cereals	3	2	2.0
Animal Hus. 4	149	Study of Breeds	2	2	1.5
*Chemistry 11	98	Agricultural Analysis	1	8	2.5
*English 3	106	History of English Literature	3		1.5
*Entomology 1	156	General Entomology	2	4	2.0
Military Science		Drill		3	.75
Physical Educ'tion		Gymnasium or Field Athletics		2	.5

Second Semester.

*Agronomy 10	145	Forage Crops	3		1.5
Agronomy 17	146	Farm Mechanics	2	2	1.5
Botany 3	153	Plant Histology		6	1.5
*English 3	106	History of English Literature	3		1.5
*Geology 1a	110	Elements of Geology	3		1.5
*Horticulture 1	165	Principles of Plant and Fruit Culture	2	2	1.5
Horticulture 3	165	Vegetable Gardening	2	2	1.5
Rural Eng'ring 1	167	Land Surveying	2		0.5
Rural Eng'ring 2	167	Roads	2		0.5
*Zoology 10	157	Economic Zoology	2	4	2.0
Military Science		Drill		3	.75
Physical Educ'tion		Gymnasium or Field Athletics		2	.5

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Agr. Economics	167		2		1
Agr. Education	169		3		1.5
*Agronomy 1	144	Soil Physics	3	4	2.5
Agronomy 12	146	Special Crops	2		1.0
Agronomy 14	146	Adv. Grain Judging (Seed Testing)		2-4	.5 to 1.0
Agronomy 15	146	Course in Tobacco	By Ap.		
Agronomy 18	146	Farm Machinery	3	2	2.0
Animal Husb. 3	148	Advanced Stock Judging	3	4	2.5
Animal Husb. 11	150	Poultry Husbandry	3	2	2.0
*Bacteriology 1	151	General Bacteriology**	1	2	1.0
Botany 4	153	Plant Pathology	2	4	2.0
Botany 12	154	Morphology of the Fungi	By Ap.		
Entomology 4	156	Advanced Entomology	2	6	2.5
*Horticulture 2	165	General Pomology	2	2	1.5
Rural Education	169		3		1.5
Rural Sociology	167		2		1.0
Veterinary Sci. 1	169	Anatomy and Physiology	4		2.0
Zoology 12	157	Advanced Zoology	2	4	2.0

*Required subjects.

†A credit represents one hour of recitation, or two hours of laboratory per week for thirty-six weeks.

**Repeated second semester.

SECOND SEMESTER.

Agronomy 2	145	Soil Physics	By Ap.		
*Agronomy 3	145	Soil Fertility	3	4	2.5
Agronomy 12	146	Special Crops	2		1.0
Agronomy 13	146	Field Crop Improvement	3		1.5
Agronomy 15	146	Course in Tobacco	By Ap.		
Agronomy 19	147	Farm Motors	3	4	2.5
Animal Husb. 7	149	Live Stock Feeding	3	2	2.0
Animal Husb. 8	150	Dairying	3	4	2.5
Animal Husb. 11	150	Poultry Husbandry	3	2	2.0
Bacteriology 3	152	Bacteria in Rel. to Ani. and Plant Dis.	1	2	1.0
Botany 5	153	Methods in Plant Pathology		6	1.5
Botany 10	154	Dendrology	1		.5
Botany 11	154	Morphology of Algae	By Ap.		
Botany 13	155	Cytology	By Ap.		
Botany 14	155	Systematic Botany	By Ap.		
Entomology 4	156	Advanced Entomology	2	6	2.5
Entomology 6	157	Apiculture	1	2	1.0
Entomology 7	157	Insect Control: Methods of Pre. Injuries	1	2	1.0
Farm Managem'nt	163		3		1.5
Horticulture 3	165	Vegetable Gardening	2	2	1.5
Horticulture 5	166	Greenhouse Construction and Manag'mt	2		1.0
Horticulture 7	166	Landscape Gardenlng; half semester	1		.5
Veterinary Sci. 2	170	Applied Pathology	4		2.0
Zoology 12	157	Advanced Zoology	2	4	2.0
Zoology 13	158	Osteology	2	4	2.0
Zoology 14	158	Embryology	2	4	2.0

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Agr. Economics	167	Co-operation and Marketing	2		1.0
Agr. Education	169		3		1.5
Agronomy 4	146	Soil Fertility	By Ap.		
Agronomy 12	146	Special Crops	2		1.0
Agronomy 14	146	Adv. Grain Judging (Seed Testing)		2-4	.5 to 1.0
Agronomy 15	147	Course in Tobacco	By Ap.		
Agronomy 20	147	Farm Engineering and Construction	3	4	2.5
Animal Husb. 5	149	Principles of Breeding	3	2	2.0
Animal Husb.12	151	Horse Husbandry	3	2	2.0
Bacteriology 4	152	Advanced Bacteriology		2	0.5
Botany 9	154	Thesis	3		1.5
Botany 11	154	Morphology of Algae	By Ap.		
Botany 13	155	Cytology	By Ap.		
Botany 14	155	Systematic Botany	By Ap.		
Horticulture 4	166	Systematic and Commercial Pomology	2	2	1.5
Horticulture 8	166	Thesis and Experimental Horticulture	By Ap.		
Rural Education	169		3		1.5
Rural Sociology	167		2		1.0
Seminar		Special Problems of Rural Life	By Ap.		

*Required subjects.

SECOND SEMESTER.

Agronomy I5	146	Course in Tobacco	By Ap.		
Animal Husb. 6	149	Genetics	By Ap.		
Animal Husb. 9	150	Beef Production (First Half Sec. Sem.)	3		.75
Animal Husb. 10	150	Animal Nutrition (Sec. Half Sec. Sem.)	3		.75
Animal Husb. 12	151	Horse Husbandry	3	2	2.0
Bacteriology 5	152	Advanced Bacteriology		2	.5
Botany 8	154	Plant Physiology	1	4	1.5
Botany 9	154	Thesis	3		1.5
Botany 12	154	Morphology of the Fungi	By Ap.		
Farm Management	163		3		1.5
Horticulture 5	166	Greenhouse Construction and Manag'mt	2		1.0
Horticulture 7	166	Landscape Gardening; sec. half sem.	1		.5
Horticulture 8	166	Thesis and Experimental Horticulture	By Ap.		
Ent. and Zool. 16	158	Plant Breeding and Seed Testing	1	2	1.0
Seminar		Special Problems of Rural Life	By Ap.		

DEPARTMENTS OF INSTRUCTION.

AGRONOMY.

Professor Roberts (Soil Fertility), Associate Professor Kinney (Field Crops), Assistant Professor Karraker (Soil Physics), Assistant Professor Farra (Agricultural Engineering), Instructor Myer (Field Crops).

The courses in the Department of Agronomy are designed to acquaint the student with the fundamental principles of soil physics, soil fertility, and the production of field crops. The work offered fits the student for farming, for the teaching of the subjects of the courses, and serves as a foundation for research training.

Instruction in agricultural engineering is given in this department for the reason that the subjects taught find wider application in the production and handling of farm crops than in the other farm industries.

In addition to the equipment already described, students have access to the work and results of the Experiment Station. Some seventy acres on the Experiment Station farm are used in the study of agronomic problems. There are nine experiment fields on various soil types of the State devoted primarily to the study of soil fertility and crop rotations.

1. Soil Physics. The origin of soils; agencies of soil formation; physical properties of soils with special reference to soil management. Prerequisites, Chemistry 1 and 2 and Geology 1a. 2.5 credits. Lectures three hours per week, laboratory four hours per week. First semester. (KARRAKER)

2. Soil Physics. Advanced Course. Physical properties of special soils, such as the student may be interested in; mechanical analysis; moisture and temperature studies. Prerequisite, Agronomy 1. Students should preferably be studying or have had Chemistry 11. Laboratory and assigned readings by appointment. Second semester. (KARRAKER)

3. Soil Fertility. Nature and sources of plant food; crop requirements; manures and fertilizers; crop rotations; the effect of different systems of farming upon the productiveness of soils. Prerequisites, Agronomy 1 and Chemistry 11. 2.5 credits. Lectures three hours per week, laboratory four hours per week. Second semester. (ROBERTS)

4. Soil Fertility. This course is designed for students who expect to teach or engage in experimental work. It includes a study of the essentials for successful field experimentation, the planning and actual laying out of model experiment fields, and a study of the results obtained by experiment station workers and other investigators. 1 credit. Lectures two hours per week. First semester. (ROBERTS)

5. Soil Physics. Course 1 adapted to the needs of special students and students in the two-years course. Prerequisite, Chemistry 1a. For second year students. Lectures two hours per week. First semester. (KARRAKER)

6. Soil Fertility. Course 3 adapted to needs of special students and students in the two-years course. Prerequisite, Agronomy 5. For second year students. Lectures two hours per week. Second semester. (ROBERTS)

7. Elementary Agronomy. This course is intended to give Freshmen an introduction to the subject of Agronomy. Students must be studying Chemistry and Botany. 1 credit. Lectures two hours per week. Second semester, (KINNEY.)

8. Cereals. A detailed study of the classification, botanical relations, distribution, composition, culture and improvement of the principal grain crops of the country. Laboratory work is designed to supplement lectures and recitations. Prerequisites, Botany 1 and 1a, Agronomy 7. 2 credits. Lectures and recitations three hours per week, laboratory two hours per week. First semester. (KINNEY, MYER)

9. Cereals. A course designed for special students and students in the two-years course. Lectures three hours per week, laboratory two hours per week. First semester. (MYER)

10. Forage Crops. A study of grasses, clovers and other forage

crops, and their adaptation, management and improvement. Prerequisites, Botany 1 and 1a, Agronomy 7. 1.5 credits. Lectures three hours per week. Second semester. (MYER)

11. Forage Crops. A course for special students and students in the two-years course. Required in first year. Lectures two hours per week. Second semester. (MYER)

12. Special Crops. The production of tobacco, hemp, cotton, broom corn, and other special crops. Elective for Juniors and Seniors in the four-years course and for special students and students in the two-years course during their second year. 2 credits. Lectures two hours per week. Tobacco first semester. Other crops second semester. (KINNEY, MYER)

13. Field Crop Improvement. Application of the principles of plant breeding to the improvement of field crops, Study of work of Experiment Stations and experimenters. Prerequisites, Agronomy 8 and 10. 1.5 credits. Three hours per week. Second semester. (KINNEY)

14. Advanced Grain Judging: Seed Testing. Prerequisites, Agronomy 7, 8, and 10. .5 to 1 credit. Two to four hours laboratory per week. First semester. (KINNEY, MYER)

15. Course in Tobacco. This course is offered for those students who wish to make a special study of this crop. Cultivation, curing and marketing are considered in detail. This course begins in March and extends throughout the summer and autumn until the Christmas holidays, so that the student may be able to study all of the operations concerned in the cultivation of this crop. For further details see page 187. 3 credits. (KINNEY AND OTHERS)

17. Farm Mechanics. An elementary course of mechanics arranged as an introduction to the study of farm machinery and farm motors. Lectures are given upon the fundamental principles of mechanics as applied to the construction and use of farm equipment, also upon some of the practical farm problems such as the design of eveners and hitches, lubrication of bearings, care and use of belts, chains and ropes, minor repairs and the construction of simple devices. Laboratory practice supplements class room work giving opportunity for actual application of problems to farm conditions. 1.5 credits. Lectures two hours per week, laboratory two hours per week. Second Semester. (FARRA)

18. Farm Machinery. Modern agricultural machinery requires mechanical knowledge and skill for its proper selection and successful operation. Various types of tillage, seeding, harvesting, and storage ma-

chines are studied and compared in detail. Laboratory practice consists of examination of the mechanical construction and operation of these machines indoors and under field conditions when possible. Text: Davidson & Chase's *Farm Machinery and Farm Motors.* Prerequisite, Agronomy 17. 2.0 credits. Lectures three hours per week; laboratory practice two hours per week. First semester. (FARRA)

19. Farm Motors. Increasing demand for power in farm operations requires that agricultural students shall become familiar with motors adapted to farm use. Stationary and traction types of farm gas and steam engines, water and electric motors, windmills and horse powers, with appliances for the utilization of their power are studied. Laboratory practice consists of the examination and practical operation of such motors indoors and under actual farm conditions. Text: Davidson & Chase's *Farm Machinery and Farm Motors.* Prerequisite, Agronomy 17. 2.5 credits. Lectures three hours per week, laboratory practice four hours per week. Second semester. (FARRA)

20. Farm Engineering and Construction. The necessity of knowing exactly the area of tracts of land, of properly locating roads and buildings, of terracing hillside lands for cultivation, and establishing drainage, irrigation, water supply, and sewage disposal systems, by simple methods and with inexpensive instruments, has been provided for in this course, as well as the construction of farm buildings and a study of building materials. Laboratory practice will offer practical farm problems to be solved, and opportunity to construct model buildings, giving experience with some of the building materials. Text: Davidson's *Agricultural Engineering* and Ekblaw's *Farm Structures.* 2.5 credits. Lectures three hours per week, laboratory practice four hours per week. First semester. (FARRA)

ANIMAL HUSBANDRY.

Horses, Dairy Cattle, Poultry.

Professor Hooper,
Assistant Professor Nicholls,
Assistant Professor Anderson,
Assistant Slade.

Beef Cattle, Sheep, Swine.

Professor Good,
Assistant Professor W. V. Smith,
Assistant Professor M. J. Smith,

The courses in Animal Husbandry are intended to acquaint the student with the fundamental principles underlying the breeding, feeding and management of domestic animals. The instruction is designed to

prepare students to become live stock farmers, teachers or investigators in animal husbandry. This University is fortunately located for this work because of the fine stock farms that surround Lexington. Arrangements have been made which give to the College the use of the Elmendorf farm of 9,000 acres near the city of Lexington, where excellent pure bred stock of all classes is maintained. Among the facilities at Elmendorf is one of the largest and best equipped dairy plants in the world.

A dairy herd of thirty pure bred cows is maintained on the Kentucky Experiment Station farm, which is situated one-half mile from the Agricultural College. Also pure bred hogs and pure bred poultry, and a large number of steers are kept on this farm all of which are available for student instruction.

Advanced students are frequently employed to test dairy herds, for the advanced registry, maintained by the different dairy cattle breeders' associations.

The State Commissioner of Agriculture has provided a Students' Stock Judging Contest at the State Fair and has liberally endowed it. The American Saddle Horse Breeders' Association offers at the State Fair each year a handsome silver trophy for the Students' Saddle Horse Judging Contest.

1. **Elementary Study of Stock Judging and Study of Breeds.** Freshmen. In this course the students are made familiar with the various types of horses, cattle, sheep and swine. Points of excellence as well as deficiencies are considered. Animals representing the different types and breeds are brought before the class and the practical work of judging is supplemented by the use of lantern slides in connection with lectures. On each Saturday visits are made to the various stock farms near Lexington. Text-book: Gay's *Judging Live Stock*. 2 credits. Lectures three hours per week, laboratory two hours per week by appointment. First semester. (NICHOLLS, M. J. SMITH)

2. **Principles of Stock Judging.** Two-year students. This course is similar to Course 1, but it is adapted to the needs of students in the two years agricultural course. Text-book: Gay's *Judging Live Stock*. Lectures three hours per week, laboratory two hours per week by appointment. First semester. (NICHOLLS, M. J. SMITH)

3. **Advanced Stock Judging.** Juniors and Seniors. The purpose of this course is to give students who desire to specialize in live stock husbandry an opportunity to further perfect their judgment in the selection of horses, cattle, sheep and swine. Students are selected from this

class to represent the University in the National Stock Judging Contest at Chicago. Two teams of students are selected to go to Chicago each fall; one for the judging of horses, beef cattle, sheep and swine, and another for the judging of dairy cattle. Students are offered the option of selecting either of these two lines of work. 2.5 credits. Lectures three hours per week, laboratory four hours per week. First half of first semester. (HOOPER, GOOD)

4. **Study of Breeds.** (Horses, Cattle, Sheep and Swine). Sophomore. In this course the characteristics of each breed of live stock are considered at length, and each breed is discussed with reference to its origin, history and development, introduction into America, and adaptability to Kentucky conditions. Trips are taken each Saturday to stock farms in the vicinity of Lexington, where representative animals are studied. Text-book: Plumb's *Breeds of Farm Animals.* 1.5 credits. Lectures two hours per week, laboratory two hours per week. First semester. (GOOD, HOOPER, NICHOLLS, W. V. SMITH, M. J. SMITH)

5. **The Principles of Breeding.** Senior. This course embraces a discussion of the general principles of breeding, and a study of the practical points of animal breeding, including variation, selection, and a comparison of the Mendelian and biometric theories. Text-book: Davenport's *Principles of Breeding.* 2 credits. Monday, Wednesday and Friday. Laboratory 9 o'clock Thursday. First semester.

(HOOPER, ANDERSON)

6. **Genetics.** Senior. This course includes a study of the reproduction of animals, a scientific study of heredity, the influence of heredity and environment in lower animals, and also human beings. 1 credit. Lectures, assigned readings and demonstrations. Texts: *Reports of American Genetics Association.* Two hours per week by appointment. Second semester. (ANDERSON)

7. **Live Stock Feeding.** Junior. A comprehensive study is made of the various feedstuffs offered in the local and general markets of the country, and the students are given training in compounding rations for different kinds of animals. Valuable observations are made in this subject on the farms visited by the students, and the varied experiments in progress on the Experiment Station farm also afford facilities for illustrative purposes. Text-book: Henry's *Feeds and Feeding.* 2 credits. Lectures Monday, Wednesday and Friday at 9 o'clock; laboratory two hours per week by appointment. Second semester.

(HOOPER, M. J. SMITH)

8. Dairying. Junior. During this course the students are made familiar with the Babcock butter fat test. They are required to take samples of milk from the different cows in the Experiment Station herd and to determine the amount of butter fat that is contained in the milk and the amount of these products that the cows will produce per year. Instruction is given in the use of the lactometer in determining solids other than fat, and in the determination of acidity of milk. Instruction is also given in cooling and pasteurizing, cream ripening, the use of starters and in the judging of milk and butter. Students also receive instruction in the churning of butter, the separation of cream, the operation of steam boilers, and in the equipment of dairies and creameries. The department has two well equipped dairy laboratories in the basement of the agricultural building where the practical instruction in this course is given. Text-book: Wing's *Milk and Its Products.* 2.5 credits. Lectures Monday, Wednesday and Friday at 10:30; laboratory Wednesday and Thursday at 1:30. Second semester.

(HOOPER, NICHOLLS)

9. Beef Production. Senior. This course continues during the first half of the semester and is followed by Course 10. Students pursuing this course will be taught the best method of feeding steers and beef cattle. Bulletins relating to feeding experiments that have been carried on at the various Experiment Stations will be studied in connection with this course. Text-book: Mumford's *Beef Production.* .75 credit. Lectures three hours per week by appointment. Second semester. (GOOD)

10. Animal Nutrition. Senior. Students who have pursued Course 9 may take this instruction if they so desire, and others who have not taken 9 may pursue Course 10. This course includes a detailed study of the nutrition of the animal body in the light of the latest scientific research. The course is offered to students who are specializing in animal husbandry. Text-book: Armsby's *Principles of Animal Nutrition.* Reference text: Kellner's *Scientific Feeding of Animals.* .75 credit. Lectures three hours per week by appointment. Second half of second semester. (GOOD)

11. Poultry Husbandry. Junior. Extensive poultry yards have been established on the Experiment Station farm where eight hundred chickens and turkeys of several different varieties are being used in important experimental work. All of this equipment is available for instructional work in this course. The students are instructed in the proper location for a poultry farm, and in judging different varieties of fowls. The Kentucky State Poultry Show is held at the University each January and

the students are instructed further in the judging of fowls during that exhibition, when special premiums are given to the students who exhibit the best ability. This course also includes a study of poultry house construction, the feeding, incubating, brooding and dressing of poultry and the marketing of poultry products. Text-book: Lewis' *Productive Poultry Husbandry*. 2 credits. Lectures three hours per week, laboratory two hours per week. Second semester, (HOOPER, SLADE)

12. **Horse Husbandry.** Senior. 1. A study of the origin, history, conformation, action, training, breeding, and feeding of the Thoroughbred Horse will be made during the first half of the first semester. 2. The second half of the first semester will be devoted to the origin, conformation, action, training, care, breeding, and rearing of the Trotting Horse. 3. The first half of the second semester will be used to study the American Saddle Horse: its origin, history, conformation, action, gaits, schooling, breeding and rearing. 4. The course will close with a study of the origin of the breed of American Jacks, their breeding, care and feeding. Some study will also be given to the breeding and rearing of mules. The work of this course will consist of lectures by the instructors and by horsemen who will be invited to make addresses from time to time. The best books in the library which deal with light horses will be used as reference texts, together with the best of the many horse journals published in this country. The laboratory work will consist in visiting farms and stables where these horses are bred and trained. 4 credits. Lectures three hours week, laboratory two hours per week. (HOOPER, ANDERSON)

BACTERIOLOGY.

Assistant Professor Pinnell.

1. **General Bacteriology.** Classification, morphology, physiology, cultivation and isolation of bacteria. Principles of sterilization and pasteurization. Bacteria in milk, water, and soil. Laboratory work consists of preparation of media; study of cultural characteristics of a selected number of bacteria; staining pure cultures and counting bacteria in milk, water, soil, etc. 1 credit. Lecture one hour per week, laboratory two hours per week. First semester.

2. **Household Bacteriology.** For students in Home Economics. Study of bacteria in relation to fermentation, decay, putrefaction, canning, etc., with corresponding laboratory work. 1.5 credits. Lecture one hour per week, laboratory four hours per week. First semester.

3. Bacteria in Relation to Animal and Plant Diseases. Lectures on the theory of immunity, cultivation, staining and identification of a number of selected, disease-producing bacteria. Prerequisite: Course 1 or 2. 1 credit. Lecture one hour per week; laboratory two hours per week. Second semester.

4. Advanced Bacteriology. Special subjects in agricultural bacteriology will be assigned for reading and laboratory work. Prerequisite: Course 1. .5 credit. Laboratory two hours per week. First semester.

5. Advanced Bacteriology. Special subjects will be assigned for reading and laboratory work. Prerequisite: Course 1. .5 credit. Laboratory two hours per week. Second semester.

BOTANY.

Associate Professor Gilbert, Assistant Professor McFarland.

The Department of Botany is located on the first floor of the Agricultural Building, where it occupies a large, well-lighted laboratory with desks and equipment for forty-five students, a smaller laboratory for advanced work, and a lecture room which has with other equipment a balopticon lantern equipped for slide, microscopic and opaque projection work.

A beginning is also being made in furnishing facilities for instruction in plant pathology. The facilities already available are the necessary sterilizing ovens, microscopes, a small collection of fungus specimens, literature on plant diseases, and a greenhouse adjoining the Agricultural Building.

1. General Morphology. The course comprises a general survey of the morphology and physiology of plants, and is designed to give the student a comprehensive view of the entire vegetable kingdom, and to afford a substantial basis for advanced and special studies. While accompanied with lectures and recitations, the laboratory method is the form of instruction principally used. Text-book: Bergen and Davis, *Principles of Botany*. 2 credits. Lecture, Thursday, fourth hour; recitation periods Tuesday, fourth hour, and by appointment. Laboratory, four hours per week, 1:30. Laboratory assignments will be made in three sections, 1, 2, 3. First semester. (GILBERT, MCFARLAND)

1a. General Morphology. A continuation of Botany 1, including the morphology of the seed plants, and in addition giving some attention to the collection and identification of the flowering plants. Frequent field trips and longer excursions will be made as conditions permit. At least one

of these trips will be required of each student. Text-book as in Botany 1, together with Gray's *Manual of Botany*. 2 credits. Lecture and recitation Tuesday and Thursday, fourth hour; laboratory four hours per week by appointment. Second semester. (GILBERT, MCFARLAND)

2a. **Systematic Botany.** This course is arranged especially for two-year agricultural students, and aims to acquaint them with the common species of the native flora. Special emphasis is laid on these groups of economic importance to the farmer. This course may not be used for university credit unless the student has, when taking it, the required number of entrance units for the four years course and satisfies the instructor as to his proficiency in the subject. In this case it may be considered a substitute for course 1a. Prerequisite: Course 1 or 7. Text-book: Gray's *New Manual of Botany, 7th Edition*. 2 credits. Lectures two hours per week, laboratory four hours per week. Second semester. (MCFARLAND)

3. **Plant Histology.** A course giving instruction in the technique involved in the preparation of plant tissues for detailed microscopic study. Practice in the paraffin and other methods of imbedding is given and the preparation of twenty-five representative slides is required. The course is valuable as a preparation for the study of Plant Physiology and Plant Pathology. Text-book: Chamberlain's *Methods in Plant Histology*. Prerequisite: Courses 1 and 1a. 1.5 credits. Monday, Wednesday and Friday, 8 to 10, first semester. (MCFARLAND)

4. **Plant Pathology.** A study of the pathological conditions of various plants of economic importance, from the standpoint of disease distribution, host, parasite and remedial measures. Text-book: Duggar's *Fungous Diseases of Plants*. Prerequisites: Courses 1 and 1a. Course 3 is also strongly recommended. 2 credits. Lecture and recitation, two hours, by appointment; laboratory, Tuesday and Thursday 8 to 10. First semester. (GILBERT)

5. **Methods in Plant Pathology.** The course involves the preparation of culture media, and the development of pure cultures of fungi; also the study of the life histories of various disease producing organisms, with some reference to their parasitism and the treatment of plant diseases. Prerequisites: Courses 1, 1a. Course 3 is also recommended to precede this work. 1.5 credits. Laboratory six hours per week by appointment. Second semester. (GILBERT)

6. **Plant Diseases.** Elective to two-year agricultural students who have had Course 7. The course will include such a consideration of plant

diseases as will be helpful and practical for short course students. Two hours per week, Monday and Wednesday, fourth hour. First semester. (GILBERT)

7. **Agricultural Botany.** This course is arranged especially for two-year agricultural students. It includes a study of the forms and structure of plants, of their physiology and ecology; also a brief survey of the plant kingdom with special reference to evolutionary development. This course can not be used for university credit. Text-book: Coulter's *Elementary Study of Botany*. Lectures two hours per week, laboratory four hours per week by appointment. First semester. (MCFARLAND)

8. **Plant Physiology.** This course aims to give training and instruction in such phases of nutrition, growth, movement and the tropisms of plants as have a practical bearing upon agriculture, horticulture and general biology. Text-book: Barnes' *Plant Physiology*. Prerequisites, Courses 1 and 1a and Chemistry 1. 1.5 credits. One lecture per week, by appointment; laboratory four hours per week, Monday and Wednesday, 1:30 to 3:30. Second semester. (MCFARLAND)

9. **Thesis.** Students who are properly prepared may select special work in some field of advanced morphology, systematic botany or pathology to be carried on during the Senior year and concluded with the presentation of a written thesis. Three hours per week. Throughout the year. (GILBERT, MCFARLAND)

10. **Dendrology.** A study of the structure and characteristics of shrubs and forest trees, involving their recognition and identification. Lectures, laboratory and field work. Prerequisites, Courses 1 and 1a. .5 credit. One hour per week by appointment. First semester. (This course may be repeated the second semester if desired.) (MCFARLAND)

11. **Morphology of Algae.** Involves a detailed morphological study of the most important families from the standpoint of evolution. A comparative study of the different genera in the various families will be made. Considerable attention will be given to identification by use of the different keys. Prequisites, Courses 1 and 1a. 2 or 3 credits. Hours by appointment. First semester. (MCFARLAND)

12. **Morphology of the Fungi.** Parallel to Course 11, taking up the morphology of the various groups of fungi with especial emphasis upon those of economic importance. Text-book: Stevens' *The Fungi Which Cause Plant Disease*. Prerequisites, Courses 1 and 1a. 1.5 credit. Lab-

oratory, four hours, and lecture one hour per week by appointment. Second semester. (GILBERT)

13. **Cytology.** A study of the structure, functions, reproduction and life history of the cell. This course will involve to a large extent histological technique and is intended to develop such a knowledge and familiarity with the fundamental structures and processes of the cell as will be useful, especially in connection with plant and animal breeding work as well as in advanced studies in plant structure and physiology. Prerequisites, Courses 1, 1a and 3. Course 8 would also be desirable to precede this. 1 credit. One laboratory and one lecture period by appointment. First semester. (GILBERT)

14. **Systematic Botany.** The purpose of this course is to acquaint the student with the latest views of classification of the entire plant kingdom. Theory as well as practice with the various keys will constitute a part of the course. It aims further to acquaint the student with the more common species of the local flora. Herbarium, field and assigned readings required. Prerequisites: Courses 1 and 1a. 2 credits; Four hours by appointment. First semester. (MCFARLAND)

ENTOMOLOGY AND ZOOLOGY.

Professor Garman, Assistant Professor McCann, Assistant Professor Vaughn, Instructor Niswonger, Instructor Stiles.

The work of the department in relation to the courses in agriculture is intended, first, to acquaint the students with the fundamentals of the subject, including a knowledge of animal structure, transformations and the life-histories; and second, to give a detailed knowledge of important predatory and parasitic species and of remedies for their injuries. While lecture, recitation and required reading are employed as they may seem desirable, the basis of all work is an actual study of animals, both in the laboratory and in the field.

The laboratories and lecture room of this department occupy the first floor of the Science Building and are provided with desks, microscopes, microtomes, paraffin baths, incubators, aquaria, lantern, collections, and other apparatus and materials for the proper handling of the subject.

Opportunities for field work are afforded by "excursions," of which several are generally arranged under the charge of instructors of this and related departments.

The following courses of study are provided, some of them having relation to agriculture as a major, others to medicine, still others to the general science courses of the University.

ENTOMOLOGY.

1. General Entomology. This is required of students taking the four-years course in agriculture, and serves as an introduction to the subject for other students intending to do special work in entomology. Types representing all the important orders of insects are studied and comparisons made between them to bring out and fix the characters of the groups represented. Wherever practicable the types chosen are of economic importance. With each type are studied other insects of the same order, these being also insects of economic interest. Methods of treating injurious insects are presented by lectures, text, and demonstrations. 2 credits. Fifth and sixth hours, Monday, Wednesday and Friday. Lectures two hours per week, laboratory four hours per week. First semester. (GARMAN, MCCANN)

2. Economic Entomology. (Two-years Agriculture.) This course is designed for two-year students in agriculture, and requires only enough study of structure to enable the student to make use of the literature of entomology. Much of the time is devoted to a study of insects of economic importance and to remedies for the injuries of the more important insect pests. Three hours per week. Second semester. (STILES)

3. Medical Entomology. Designed for students taking courses in medicine. A foundation is laid in insect morphology, including a knowledge of insect structure and of the characters of important groups. In the study of types, special attention is given to species such as mosquitoes, house-flies and fleas, known to be concerned in the spread of disease. 2 credits. Fifth and sixth hours, Monday, Wednesday and Friday. Lectures two hours per week, laboratory four hours per week. Second semester. (GARMAN, MCCANN)

4. Advanced Entomology. (Elective.) This is intended for students who specialize in the subject, and for those engaged in thesis work. It is varied to suit the objects of students undertaking the work, and may be largely economic, ecological, anatomical, or systematic in its bearing. 5 credits. Fifth and sixth hours, Monday, Wednesday and Fridays. Lectures two hours per week, laboratory six hours per week. Throughout the year. (GARMAN, MCCANN)

5. **Short Course Entomology.** The entomology taught to students taking the 10-weeks winter course in agriculture, is very largely economic and practical. Common injurious species are examined and the main facts of their life-histories are presented by lectures. Insecticides, spraying, and other means of combating insect pests are dealt with, illustrative apparatus and materials being furnished from the collections belonging to the University and Experiment Station. Two hours per week. Second semester. (McCANN, STILES)

6. **Apiculture.** This includes a careful study of the structure and life-history of the Honey Bee, and of its enemies and diseases, together with practice in handling bees in the Apiary of the Department of Entomology and Botany of the Experiment Station. 1 credit. Lectures one hour per week, laboratory two hours per week. Second semester. (GARMAN, STILES)

7. **Insect Control: Methods of Preventing Injuries.** Inspection and Field Entomology. 1 credit. Lectures one hour per week, laboratory two hours per week. Prerequisite, Course 1, or 4. Second semester. (GARMAN, NISWONGER, STILES)

8. **Systematic Entomology and Entomological Literature.** (Elective.) 1 credit. Lectures one hour per week, laboratory two hours per week. Prerequisite, Course 4. First semester. (GARMAN, McCANN)

ZOOLOGY.

9. **General Zoology.** (Arts and Science students.) A general course in Zoology, involving lectures, demonstrations, recitations, and laboratory work. 1.5 credits. First hour, Tuesday and Thursday. Lectures one hour per week, laboratory one hour per week. Throughout the year. (GARMAN, STILES)

10. **Economic Zoology.** (Four-year Agriculture.) This is a somewhat general course covering the whole field, but with special emphasis laid on the economic side of the subject. It is taught by laboratory work, text and lectures. 2 credits. Fifth and sixth hours, Monday, Wednesday and Friday. Lectures two hours per week, laboratory four hours per week. Second semester. (GARMAN, McCANN, STILES)

11. **Economic Zoology.** (Two-year Agriculture.) A brief course, largely economic and devoted to acquiring an acquaintance with animals of economic interest. Three hours per week. First semester. (STILES)

12. **Advanced Zoology.** The student studies the form and structure

of typical representatives of each of the sub-kingdoms, and is aided by lectures on the systematic position, habits and development. At least one all-day field excursion is required. 4 credits. Fifth and sixth hours, Monday, Wednesday and Friday. Lectures two hours per week, laboratory four hours per week. Throughout the year.

(GARMAN, MCCANN)

13. Osteology. The course is a study of the comparative osteology of vertebrates, but is restricted largely to the mammalia. Skeletons are prepared by each student, and where time permits may be mounted. Text-book: Flower's *Osteology of the Mammalia.* 2 credits. Lectures two hours per week, laboratory four hours per week. Second semester.

(GARMAN, STILES)

14. Embryology. This course consists of lectures on the general facts and principles of embryology, accompanied by practical work on the embryonic development of such vertebrates as the frog and the chick. Text-books: Balfour's *Elements of Embryology*, Holmes' *Biology of the Frog*, and Heisler's *Text-book of Embryology.* 2 credits. Lectures two hours per week, laboratory four hours per week. Second semester.

(GARMAN, MCCANN, STILES)

15. Biology. The general principles. 3 credits. Lectures three hours per week. Prerequisite, Course 10, or 12. Throughout the year.

(GARMAN, MCCANN)

SEED TESTING.

16. Seed Testing. A seed laboratory has been established in the Experiment Station building, where such advanced students as can be accommodated will be received. 1 credit. Lectures one hour per week, laboratory two hours per week. Only Seniors admitted. Second semester.

(VAUGHN)

SPECIAL COURSES IN ENTOMOLOGY AND ZOOLOGY.

As a beginning in what it is hoped will prove useful additions to the opportunities of the University, two courses leading to the degree of Bachelor of Science are here presented. Other closlely allied courses will be added later and provision be made for study leading to an advanced degree in the pure science of Biology. As the field occupied by the Department of Entomology and Zoology is now included as a part of the domain of the College of Agriculture, the work is organized for the present as a Department of the College. They are designed to meet a demand for training in biology, either as a general education or as a preparation for special work in a State College or Station.

The many points of contact between biology and the ordinary affairs of our lives, in the household, in business, and in various professions, render its study peculiarly suited to produce effective and useful men and women. Besides the usefulness of its facts, the subject provides a training of the mind in observation and reasoning, which is believed to be of the first rank.

The schedules now presented are tentative arrangements which will be modified as the courses are developed, at least for the Junior and Senior years, and possibly in minor features for the Sophomore year. The outlines for the Freshman year will probably remain unchanged, since they include branches of study necessary as a preparation for advanced biological work and study.

OUTLINE OF COURSE IN ECONOMIC ENTOMOLOGY FOR THE DEGREE OF BACHELOR OF SCIENCE.

FRESHMAN YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Botany 1	152	General Morphology	2	4	2.0
Drawing				4	1.0
English 1	105	English Composition	3		1.5
French 1	126	French Grammar	3		1.5
Mathematics 2a	123	Trigonometry	3		1.5
Zoology 12	157	Advanced Zoology	2	4	2.0
Military Sci. or		Drill		3	.75
Home Economics		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5

Second Semester.

Botany 1a	152	Morphology and Classification of the Seed Plants	2	2	2.0
English 1a	105	English Literature	3		1.5
French 1	126	French Grammar	3		1.5
Mathematics 3	123	Algebra	5		2.5
Zoology 12	157	Advanced Zoology	2	4	2.0
Military Sci. or		Drill		3	.75
Home Economics		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5

*A credit represents one hour of recitation or two hours of laboratory work for thirty-six weeks.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Botany 4	153	Plant Pathology	1	4	1.5
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Entomology 1	156	General Entomology	2	4	2.0
German 1 or 3	126		3		1.5
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5

Second Semester.

Botany 5	153	Methods in Plant Pathology		6	1.5
Chemistry 2	97	Chemistry of the Metals	3	6	3.0
Entomology 6	157	Apiculture	1	2	1.0
German 1 or 3	126		3		1.5
Physiology 1	94	General Physiology	3		1.5
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Bacteriology 1	151	General Bacteriology	1	2	1.0
Entomology 4	156	Advanced Entomology	2	6	2.5
German 2 or 4	126		3		1.5
Physics 5	130	General Physics	3		1.5
Horticulture 4	166	Systematic and Commercial Pomology	1	4	1.5

Second Semester.

Entomology 4	156	Advanced Entomology	2	6	2.5
Geology 1a	110	Elements of Geology	3		1.5
German 2 or 4	126		3		1.5
Horticulture	165	Principles of Plant and Fruit Culture	2	2	1.5
Physics 5	130	General Physics	3		1.5
Ent. and Zool. 16	158	Seed Testing	1	2	1.0

SENIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Zoology 15	158	Biology	3		1.5
Entomology 8	157	Systematic Entomology	1	2	1.0
History	113	Elective	2		1.0
Political Economy 1	114	Economics	2		1.0
Political Science 1	115	American Government	3		1.5
Thesis					2.0

Second Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Zoology 15	158	Biology	3		1.5
Entomology 7	157	Insect Control and Field Work	1	2	1 0
History	113	Elective	2		1.0
Political Economy 1	114	Economics	2		1.0
Political Science 1	115	American Government	3		1.5
Thesis					2.0

OUTLINE OF COURSE IN BIOLOGY FOR THE DEGREE OF BACHELOR OF SCIENCE.

FRESHMAN YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Botany 1	152	General Morphology	2	4	2.0
Drawing				4	1.0
English 1	105	English Composition	3		1.5
French 1	126	French Grammar	3		1.5
Mathematics 2a	123	Trigonometry	3		1.5
Zoology 12	157	Advanced Zoology	2	4	2.0
Military Sci. or		Drill		3	.75
Home Economics		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5

Second Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Botany 1a	152	Morphology and Classification of the Seed Plants	2	4	2.0
English 1	105	English Literature	3		1.5
French 1a	126	French Grammar	3		1.5
Mathematics 3	123	Algebra	5		2.5
Zoology 12	157	Advanced Zoology	2	4	2.0
Military Sci. or		Drill		3	.75
Home Economics		Survey Course	1	2	1.0
Physical Education		Gymnasium or Field Athletics		2	.5

*A credit represents one hour of recitation or two hours of laboratory work for thirty-six weeks.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Botany 4	153	Plant Pathology	1	4	1.5
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
German 1 or 3	126		3		1.5
Physiology 1	94	General Physiology	3		1.5
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5

Second Semester.

Botany 5	153	Methods in Plant Pathology		6	1.5
Chemistry 2	97	Chemistry of the Metals	3	6	3.0
Entomology 6	157	Apiculture	1	2	1.0
German 1 or 3	126		3		1.5
Military Science		Drill		3	.75
Physical Education		Gymnasium or Field Athletics		2	.5

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Bacteriology 1	151	General Bacteriology	1	2	1.0
Entomology 4	156	Advanced Entomology	2	6	2.5
German 2 or 4	126		3		1.5
Physics 5	130	General Physics	3		1.5
Horticulture 4	166	Systematic and Commercial Pomology	1	4	1.5

Second Semester.

Entomology 4	156	Advanced Entomology	2	6	2.5
Geology 1a	110	Elements of Geology	3		1.5
German 2 or 4	126		3		1.5
Horticulture 1	165	Principles of Plant and Fruit Culture	2	2	1.5
Physics 5	130	General Physics	3		1.5
Ent. and Zool. 16	158	Seed Testing	1	2	1.0

*A credit represents one hour of recitation or two hours of laboratory work per week for thirty-six weeks.

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Ent. and Zool. 15	158	Biology	3		1.5
Foods		Microscopy of Foods (to be arranged)	1	4	1.5
History	113	Elective			1.0 to 1.5
Political Economy 1	114	Economics	2		1.0
Political Science 1	115	American Government	3		1.5
Thesis					2.0

SECOND SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Ent. and Zool. 15	158	Biology	3		1.5
Textiles		Microscopy of Textiles	1	4	1.5
History	113	Elective			1.0 to 1.5
Political Economy 1	114	Economics	2		1.0
Political Science 1	115	American Government	3		1.5
Thesis					2.0

*A credit represents one hour of recitation or two hours of laboratory work per week for thirty-six weeks.

FARM MANAGEMENT.

Farm management as offered here does not constitute a separate department. However, within recent years the study of farm management has come to be recognized as one of the most valuable courses given in our agricultural colleges. It is the crowning study in agricultural practice as it teaches the student how to apply to personal farming the facts, principles and sciences of agriculture that he has learned during his course. It trains the student to see in their proper proportions the factors which insure success in farming, for farm management is in reality the study of business principles in farming. Farm management deals with the organization and management of a farm enterprise for the purpose of securing the greatest continuous profit.

The logical way to find out the most profitable methods of farm organization and management is to study the methods in use and the profits secured on a large number of farms and by comparison learn in what points the more successful farms differ from the less successful ones.

Such agricultural surveys are of great value in pointing out the best ways to improve efficiency in the operation of individual farms. Careful surveys have been made by the Federal Government and by a number

of State Experiment Stations and the class room instruction in farm management will be largely based on the facts brought out by these investigations. These will be supplemented by data secured in a survey of over 100 Kentucky farms made by the staff of the Kentucky Agricultural Experiment Station in the summer of 1912.

General Farm Management. Elective for Juniors and Seniors, and for special students. Course consists of lectures, recitations, and collateral reading of bulletins on various phases of farm management. Students in the course are familiarized with the principles involved in the choice of a type of farming; the comparative merits of diversified and specialized farming, and of intensive and extensive farming; the maintenance of soil fertility from a business standpoint; the relation of live stock to farm management; the best size of farm; the relation of capital to profits and the farmers' interest in rural credits; farm rental systems; the management of man and horse labor and machinery for greatest profits; the size and shape and arrangement of fields and the relation of buildings to the farm; the marketing of farm products; farm accounts, including an annual inventory and a simple method of book-keeping; a calculation of cost accounts, the choice of a region for farming and the important considerations in buying a farm. A special detailed study is made of a number of successful Kentucky farms involving different types of farming. 1.5 credits. Three lectures per week. Second semester. (KINNEY, NICHOLLS)

HORTICULTURE.

Professor Mathews, Assistant Professor Hofmann.

Recent additions to both the staff and the equipment of the department have made it possible to materially broaden the scope of instruction provided in horticulture, both as regards the variety and the amount of work offered in the various branches of the subject.

Being intimately connected with the work of the Experiment Station, the horticultural equipment and the experiment work in progress upon the Station grounds, incidentally become of great service in providing illustrative material, and in affording practice in horticultural operations.

During the year 1913-14 the acreage devoted to horticulture upon the Station grounds was greatly increased. An orchard of eight acres of standard varieties of fruit has been planted, additions have been made to the vineyard, and the small fruit plantations and vegetable garden areas have been materially enlarged.

A greenhouse of the most approved design, for purposes of propagation, plant breeding, and forcing of garden crops has been constructed during the past year, and is now in constant use for experiment work.

In addition to the experiment work undertaken upon the local Station grounds, arrangements have been entered upon for the conduct of orchard experiments in various other parts of the State.

Graduate and other advanced students showing special aptitude for such work will be given the privilege of aiding in the conduct of these various undertakings for experiment and demonstration, as occasional opportunities offer. Courses 1 and 2 constitute an introductory year of elementary horticulture which is at present required of all agricultural students, and all other courses in the department are elective.

For a limited number of advanced students who are electing horticulture as their major study, provisions may be made for the conduct of certain work during the summer vacation for which University credit toward graduation will be allowed.

Students considering the selection of horticulture as their major study should reach a decision, if possible, before the close of the Sophomore year, and confer with the head of the department concerning the following year's work.

1. **Elements of Plant and Fruit Culture.** Sophomore. A review of the fundamental activities of plant life with special reference to the growth of orchard and garden crops, the plant as influenced by normal and abnormal temperatures; by its supply of water, light, food, etc,; and the effect of parasites, soil conditions, etc. A further study is made of such practical details as propagation, seed selection, transplanting, pruning, spraying, frost protection, etc. Text-book; Green's *Popular Fruit Growing.* 1.5 credits. Lectures M. and F., 9:00. Laboratory sections, 1:30 by appointment. Second semester.

(MATHEWS, HOFMANN)

2. **General Pomology.** Junior. A study of the origin, history, characteristics, adaptation to Kentucky conditions, and management of orchard and garden fruits. Further consideration is given to harvesting, marketing, cold storage, etc. Judging and scoring of apples, pears, nuts, and other available fruits. Text-book: Green's *Popular Fruit Growing.* 1.5 credits. Lectures, M. W., 9:00. Laboratory in sections, M. T. Th., 1:30 by appointment. First semester.

(MATHEWS, HOFMANN)

3. **Vegetable Gardening.** Sophomore or Junior. A study of the principles of vegetable growing for home and market considered with refer-

ence to culture in the field and forcing under glass. Text-book: Watts' *Vegetable Gardening.* 1.5 credits. Lectures, T., Th., 10:30. Laboratory, by appointment, 1:30. Second semester. (MATHEWS, HOFMANN)

4. **Systematic and Commercial Pomology.** Senior. A study of the origin, history and varieties of the vineyard and orchard fruits. Practice is given in describing and identifying varieties, in fruit judging, the preparation of fruit exhibits, etc. Text-book: Waugh's *Systematic Pomology* 1.5 credits. Lectures one hour per week; laboratory four hours per week by appointment. First semester. (HOFMANN)

5. **Greenhouse Construction and Management.** Junior or Senior. A course designed to familiarize the student with the different varieties of construction of greenhouses, as adapted to various uses. Studies are made of the details of heating and water supply, with practice in pipe fitting, etc. 1 credit. Lectures Tuesday, 9; laboratory two hours per week, 1:30, by appointment. Second semester. (HOFMANN)

6. **Home Garden and Grounds.** Juniors and Seniors in the School of Home Economics. A brief course designed to give to young women some helpful acquaintance with the problems arising in the care of the kitchen-, fruit-, and flower-garden, window gardening and the improvement of ornamental grounds about the home. Text-book: Bailey's *Manual of Gardening.* .8 credit. Lectures two hours; laboratory two hours per week by appointment. First half second semester. (MATHEWS)

7. **Elements of Landscape Gardening.** Junior or Senior. A discussion of the arrangement, planting and care of trees, shrubs, and other ornamental plants for the adornment of the home and other private and public grounds. Dendrology, Botany X, should precede or accompany this course. .5 credit. Lecture Tuesdays, 11:30; laboratory and field practice 1:30, by appointment, two hours per week. Second half second semester. (MATHEWS)

8. **Thesis and Experimental Horticulture.** Senior. Advanced work arranged to meet the needs of individual students who are making horticulture their major study. Based upon research and experiment work in the department. When possible, arrangements for such a course should be made before the close of the Junior year. In special cases the work may be done in part during the summer vacation. 1 to 4 credits as determined by character and amount of work undertaken. Throughout the year. (MATHEWS, HOFMANN)

RURAL ENGINEERING.

Professor Rowe, Professor Terrell.

1. **Land Surveying.** An elementary course in land surveying methods and the use of surveying instruments, with recitations, lectures and field work. The field work affords practice in the use of chain, tape, compass, transit and level. .5 credit. Two hours per week. Second half second semester. (TERRELL)

2. **Highway Location and Construction.** Road materials, macadam roads, sand clay roads, gravel roads, specifications for roads. .5 credit. Two hours per week. Second half second semester. (TERRELL)

3. **Farm Sanitation.** Designs for special problems, plumbing, water closets, baths, urinals, sewage disposal, water supply. Recitations, assigned readings, lectures and designs. Two hours per week, by arrangement. (ROWE)

RURAL SOCIAL SCIENCE.

Associate Professor Bohannan.

AGRICULTURAL ECONOMICS AND SOCIOLOGY.

The work of these courses is based on the idea that the successful farmer or agricultural specialist in any line must possess not only a knowledge of the physical force underlying farming, but must also be thoroughly acquainted with the economic and social forces with which the farmer must contend. At no previous period in our State or National history has there been as much attention given to the matters of Rural Credits, Marketing, Cooperation, and the problems of rural social development, as at present. Especial attention is called to the course in Cooperation and Marketing for advanced students. There is a constant demand on the part of the United States Department of Agriculture for men trained in this field for its new Bureau of Markets. In fact, no agricultural worker can today afford to be uninformed concerning these matters, and it is the aim of these courses to afford the student an opportunity to get in touch with the theory and practice of agricultural, economic and social institutions and organizations.

1. **Agricultural Economics.** Junior. Open also to other advanced students. This course will include a consideration of the general princi-

ples of agricultural economics, the factors of production, improvement of the business side of farming, farm bookkeeping, cost accounts, tenancy, conservation, rural credits, marketing, etc. This course will be found profitable to general farmers, agricultural specialists, and to general students who wish to understand some of the economic problems of our greatest industry. Text: Lectures, assigned readings, reports and discussions. 1 credit. Two hours per week. First semester. (BOHANNAN)

2. Rural Sociology. Juniors and Seniors. This course is designed to put students in touch with the fundamental principles underlying the general social organization of rural life, and also to give them such knowledge of ways and means of community improvement as will enable them to render positive service to their respective communities. Among other matters will be considered the following: Rural Vital Statistics; the Shifting of the Rural Population; Community Hygiene and Sanitation; Good Roads; the Rural Church; the Rural School; Community Cooperation for Community Betterment. An essential feature of the course will be a study of the pupil's own community, with a view to recommending community action for the betterment of the general social, intellectual, moral, and economic conditions. Lectures, assigned readings, reports and discussions. 1 credit. Two hours per week. First semester. (BOHANNAN)

3. Cooperation and Marketing. Seniors and Graduate Students. Prerequisite, Agricultural Economics. The purpose of this course is to put the student in touch with the principles underlying cooperation and the science of marketing. A detailed study will be made of the rise and development of the various forms of agricultural cooperation in Europe and America, including cooperative buying, cooperative stores, cooperative marketing, general farmers' organizations, and rural credits. An attempt will be made to ascertain the essentials of successful cooperative effort along each of the lines studied, especial attention will be given to marketing and cooperation in Kentucky. Text: Assigned readings, lectures, reports. 1 credit. Two hours per week. First semester. (BOHANNAN)

4. Seminar. Special Problems of Rural Life. Research. Seniors and Graduates. This course is designed to meet the needs of those who desire to make a more intensive study of the problems of rural sociology, economics, and education than is possible in the more general courses listed above. Each member of the class will be expected to select, with the advice of the instructor, some one problem to which he will devote himself for the remainder of the semester or the year. The class will

meet once each week for a two hours session to discuss the progress of these investigations. Among other subjects which will be available for 1915-1916 are: Rural Community Surveys, social, economic, and educational; Cooperative Enterprises in Kentucky; Rural Credits; Markets; The Relation of the Rural School to its Community; Rural Health and Sanitation; Recreational Facilities of Typical Rural Communities, etc. Throughout the year. (BOHANNAN)

AGRICULTURAL EDUCATION.

The teaching of agriculture in elementary and high schools is making rapid advances both in the country at large and in Kentucky. The time is not far distant when this subject will be added to our public school system by legislative enactment. Teachers of this branch are in constant demand and at very attractive salaries. The courses here offered are designed to fit students for this new work.

1. **Agricultural Education.** Junior or Senior. The work will consist of lectures, assigned readings, reports and discussions on the principles underlying the organization and teaching of agriculture in elementary and high schools. The student will become familiar with the work which is being done in other countries and other States. 1.5 credits. Three hours per week. First semester. (BOHANNAN)

2. **Administration and Supervision of Rural Education.** A course intended for those who are fitting themselves to fill positions as rural school supervisors and for those who are actually in the service. Among other matters will be considered National and State Control and Support of Rural Education, Consolidation, Philosophy of the Course of Study, Rural School Hygiene, Supervision and Direction of Teachers, and the Technique of Instruction. 1.5 credits. Three hours per week. First semester. (BOHANNAN)

VETERINARY SCIENCE.

Professor Graham, Associate Professor Pontius.

1. **Veterinary Anatomy and Physiology.** A study of the anatomy of animals, and the different organs of health. Special stress is laid on conformation with reference to common unsoundness. This work is supplemented by demonstrations from mounted skeletons, wax models, charts, etc. A study of health and disease; the etiology of disease; predisposing and exciting causes; means and manner of propagation and transmission of disease; means, natural and artificial, by which animals

resist disease; general hygiene and stable sanitation. Elective for Juniors and Seniors. 2 credits. Lectures four hours per week. First semester.

2. **Applied Pathology.** A systematic study of the diseases common to domestic animals, with special attention to their prevention and relation to public health. Brief discussion of the biological phenomena peculiar to specific and infectious diseases. Demonstrations in post-mortem technique. Elective for Juniors and Seniors. Prerequisite: Veterinary Science 1. 2 credits. Lectures four hours per week. Second semester.

School of Home Economics.

Food and Nutrition—*Associate Professor Mary E. Sweeny, Assistant Professor Aubyn Chinn, Instructor Clara White.*

Textiles and Clothing—*Assistant Professor Ruby Buckman.*

The Department of Home Economics has quarters in the Education Building. The offices of the professors are on the first and third floors. The laboratories for cooking and sewing, a demonstration dining-room, a dress-making laboratory and household and physiological chemistry laboratory together with lecture rooms of the department, occupy the third floor of this building,

Home Economics is a Department of the College of Agriculture, whose classes are coordinated and correlated with those offered in this college, and special class work is offered for students in bacteriology, home gardening and other subjects. The Food Department of the Experiment Station opens its laboratories to the students in household chemistry under the direction of its chemists for a limited amount of study of the adulteration of food supplies. The laboratory work is supplemented by lectures on food sanitation and adulteration by the experts of this Department and practical phases taken up by the field inspectors.

The course in Home Economics is designed to meet the needs of two classes of students, those who specialize in other lines of work, but desire a knowledge of the fundamental principles underlying the sciences most directly concerned in the home, and those who wish to take a full course leading to the degree of Bachelor of Science in Home Economics.

Those students taking a course leading to a degree may major either in *Food and Nutrition or Textiles and Clothing.*

Besides the subjects prescribed in the course which are closely allied to Home Economics, such as Chemistry, Physiology, Botany, Bacteriology and others, much time is given to Modern Languages, Sociology, and Economics, giving the student a broad and liberal education as well as technical training. In the Junior and Senior years certain subjects may be elected subject to the approval of the Dean and the Head of the Department.

Students are advised to elect High School Physics during the course in High School and two years of either French or German.

OUTLINE OF COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN HOME ECONOMICS, FOOD AND NUTRITION, MAJOR.

FRESHMAN YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
English 1	105	English Composition	3		1.5
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Ger. 3 or French 1	126		3		1.5
Home Economics 1	175	Technology of Cooking	1	4	1.5
Botany 1	152	General Morphology	2	4	2.0
Physical Training		Gymnasium		2	.5

Second Semester.

Botany 1a	152	Morph'ogy and Class. of the Seed Plants	2	4	2.0
English 1	105	English Composition	3		1.5
Chemistry 2	97	Chemistry of the Metals	2	6	3.0
Ger. 3 or French 1	126		3		1.5
Home Economics 2	176	Home Cookery	1	4	1.5
Physical Training		Gymnasium		2	.5

*A credit represents one hour of recitation or two hours laboratory per week for thirty-six weeks.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
English 3	107	Hist. of English Literature	2		1.0
Chemistry 9	98		1	8	2.5
Ger. 4 or French 2	126	Quantitative Analysis	3		1.5
Home Economics 3	176	Food Production and Manufacture	2		1.0
Home Economics 5	176	Marketing		2	.5
Physiology 1	130	General Physiology	3		1.5
Physical Training		Gymnasium		2	.5

Second Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
English 3	107	Hist. of English Literature	2		1.0
Chemistry 6	97		2		1.0
Ger. 4 or French 2	126	Organic Chemistry	3		1.5
Home Economics 4	176	Elementary Food Economics	1	4	1.5
Home Economics 6	176	Household Chemistry	2	4	2.0
Physics 3	130	Household Physics	3	2	2.0
Physical Training		Gymnasium		2	.5

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Education 1 or 2	104	Educational Psychology	3		1.5
Political Economy 1	114	Elements of Economics	2		1.0
Bacteriology 2	151	Household Bacteriology	1	4	1.5
Home Economics 7	177	Household Sanitation	3		1.5
Home Economics 9	177	Nutrition	3		1.5
Home Econ. 14	178	Hand Sewing	1	4	1.5
Electives					

Second Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Education 1 or 2	104	Educational Psychology	3		1.5
Political Economy 1	114	Elements of Economics	2		1.0
*Home Economics 7	177	Household Sanitation	3		0.75
†Home Economics 8	177	Household Management	3		0.75
Home Economics 9	177	Nutrition	3		1.5
Home Econ. 15	178	Elementary Dressmaking		6	1.5
Home Econ. 16	178	Textiles	1		0.5
Electives					5.0

*To March 20th.

†Begigs March 20th.

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Education 3	104	Philosophy of Education	2		1.0
Home Econ. 12	177	Physiological Chemistry	3	6	3.0
Home Econ. 13	178	Teaching of Home Economics	2		1.0
Electives					
§Home Econ. 26	180	Journal Club	1		0.5

SECOND SEMESTER.

Education 3	104	Philosophy of Education	2		1.0
*Home Econ. 10	177	Diet in Disease	2		0.5
†Home Econ. 11	177	Invalid Cookery	1	1	0.4
Home Econ. 13	178	Teaching of Home Economics	2		
Electives					
§Home Econ. 26	180	Journal Club	1		0.5

OUTLINE OF COURSE LEADING TO THE DECREE OF BACHELOR OF SCIENCE IN HOME ECONOMICS, TEXTILES AND CLOTHING, MAJOR.

FRESHMAN YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Freehand Drawing				2	0.5
English 1	105	English Composition	3		1.5
Ger. 3 or French 1	126		3		1.5
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Botany 1	152	General Morphology	2	4	2.0
Home Economics 14	178	Hand Sewing	1	4	
Physical Training		Gymnasium		2	0.5

SECOND SEMESTER.

English 1	105	English Composition	3		1.5
Ger. 3 or French 1	126		3		1.5
Chemistry 2	97	Chemistry of the Metals	3	6	3.0
Home Economics 15	178	Elementary Clothing		6	1.5
Home Economics 16	178	Textiles	1		0.5
Botany 1a	152	Morphology and Classification of the Seed Plants	2	4	2.0
Physical Training		Gymnasium		2	0.5

*To March 20th.
†Begins March 20th.
§Elective.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Chemistry 9	98	Quantitative Analysis	1	8	2.5
Ger. 4 or French 2	126		3		1.5
English 3	107	Hist. of English Literature	2		1.0
Physiology 1	94	General Physiology	3		1.5
Home Economics 17	178	Dressmaking	1	4	1.5
Physical Training		Gymnasium		2	0.5

Second Semester.

Chemistry 6	97	Organic Chemistry	2		1.0
Ger. 4 or French 2	126		3		1.5
English 3	107	Hist. of English Literature	2		1.0
Home Economics 18	179	Home Decoration	1	4	1.5
Home Economics 19	179	Millinery		4	1.0
Physics 3	131	Household Physics	3	2	2.0
Physical Training		Gymnasium		2	0.5

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Education 1 or 2	104	Educational Psychology	3		1.5
Political Econ. 1	114	Elements of Economics	2		1.0
Bacteriology 2	151	Household Bacteriology	1	4	1.5
Home Econ. 20	179	Tailoring and Advanced Dressmaking		4	1.0
Home Econ. 21	179	Historic Study of Costumes	1		.5
Home Econ. 1	175	Technology of Cooking	1	4	1.5

Second Semester.

Education 1 or 2	104	Educational Psychology	3		1.5
Home Econ. 22	179	Textile Laboratory		4	1.0
Home Econ. 2	176	Home Cookery and Table Service	1	4	1.5
*Chemistry	96	Chemistry of Textiles and Dyeing			
Political Econ. 1	114	Elements of Economics	2		1.0
*Electives					

*Electives.

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Education 3	104	Educational Philosophy	2		1.0
Home Econ. 23	179	Art Needle Work		4	1.0
Home Econ. 13	177	Teaching of Home Economics	2		1.0
*Home Econ. 26	180	Journal Club	1		.5
*Electives		Electives			

SECOND SEMESTER.

Education 3	104	Educational Philosophy	2		1.0
Home Econ. 24	179	Thesis		8	2.0
Home Econ. 13	178	Teaching of Home Economics	2		1.0
*Home Econ. 26	180	Journal Club	1		.5
*Electives		Electives			

*Electives.

For students majoring in Food and Nutrition, Home Economics courses from 14 to 23 (Textiles and Clothing) may be elected.

For students majoring in Textiles and Clothing, Home Economics courses from 3 to 12 may be elected.

ELECTIVES.

Mathematics	English 15, 15b, 15c,	Landscape Gardening
Animal Husbandry 7	16, 17, 18, 23, 24	Animal Husbandry 5
Agronomy 7	Home Gardening	Political Science.
Geology 1	Horticulture	Chemistry 10
History 1 and 2	Political Economy	Zoology
Spanish	Household Physics 4	Greek
	Latin	

Chemistry of Textiles and Dyeing.

HOME ECONOMICS.

1a. **Elementary Study of Food and Cookery.** A course designed to meet the needs of students not having had preliminary training in Home Economics in the high schools. No credit. Lecture one hour per week; laboratory four hours per week. First semester. (MISS CHINN)

1. **Technology of Cooking.** A study of foods, their chemical composition, kind and use; changes effected by heat, cold and fermentation;

manufacture of foods, and dietary combinations. Prerequisite 1a, or its equivalent in high school, (release from this requirement only upon advice of the Head of the Department), Chemistry 1 or as a parallel. 1.5 credit. Lecture one hour per week, laboratory four hours per week. First semester, repeated second semester. (MISS CHINN)

2. **Home Cookery and Table Service.** A course emphasizing the practice of home cookery, including planning, cooking, serving of breakfasts, luncheons and dinners. Prerequisite 1. 1.5 credits. Lecture one hour per week, labaratory four hours per week. Second semester. (MISS CHINN)

3. **Food Production and Manufacture.** Lecture course describing the preparation of various staple foods from their raw state to the condition in which they reach the household, together with a discussion of their nutritive value and cost. Among the foods discussed are cereals, fruits, vegetables, sugar, meat, tea, coffee, and dairy products. 1 credit. Lectures two hours per week. First semester. (MISS CHINN)

4. **Elementary Food Economics.** A study of the principles of diet, the one hundred calorie portion, the influence of age, sex and occupation on diet. The making of balanced menus for limited sums of money. In the laboratory the student becomes familiar with measurements, food values, relative cost and nutritive value. Purchases are made and menus computed. Prerequisites, Home Economics 1 and 2, and General Chemistry. 1.5 credit. Lectures one hour per week, laboratory four hours per week. Second semester. (MISS CHINN)

5. **Marketing.** This course deals with the purchase of food supplies, selection of cuts of meat for family use, cost in relation to nutritive value, vegetables, fruit and dairy products, groceries, wholesale and retail; makes a study of sources of supply, influence of same upon cost, influence of season upon the price. This will include laboratory practice in the class, purchasing for the department classes in cooking, visiting the market and wholesale houses. Designed to train the student in purchasing not only for her own home consumption but for schools and institutions. .5 credit. Laboratory two hours per week. First semester. (MISS CHINN)

6. **Household Chemistry.** Practical applied study of the materials used in the home. Fuels, their heat value, ash and composition, metals commonly used for domestic purposes, paints, foods, condiments, tea and coffee, adulteration and substitutes. Prerequisites, General Chemistry,

Qualitative and Quantitative Chemistry. 2 credits. Lectures two hours per week, laboratory four hours per week. Second semester.

(MISS SWEENY)

7. **Household Sanitation.** This subject is studied by means of lectures dealing with healthfulness of location, drainage and surroundings of a dwelling; heating, types and advantages of each; necessity for proper amount of sunlight; ventilation; smoke, dust and dirt; overcrowding; drinking water; disposal of household waste; care of food; preventable disease. 2.25 credits. Lectures three hours per week. First semester and half second semester. (MISS SWEENY)

8. **Household Management.** A course of lectures dealing with the proper distribution of the income, budgets, labor saving devices, household accounts, scientific management of the home. .75 credit. Lectures three hours per week. Begins March 20th. Second semester.

(MISS CHINN)

9. **Human Nutrition.** Lectures and recitation upon fundamental metabolic processes taking place in digestion; normal absorption, assimilation and use of food; chemical and physical changes in digestion; feeding of individual families and groups under varying physiological, economical and social conditions. Prerequisites, Bacteriology, Qualitative, Quantitative, Organic and Household Chemistry. 3 credits. Lectures three hours per week. First and second semesters. (MISS SWEENY)

10. **Diet in Disease.** Lectures on the causes and physiological effects of disease, such as typhoid, tuberculosis, gout, diabetes and intestinal diseases. Given in connection with Home Economics 11. .5 credit. Lectures two hours per week. Half of second semester. (MISS SWEENY)

11. **Invalid Cookery.** This course consists of practical demonstrations of the preparation and cooking of food for convalescents. .4 credit. Lecture one hour per week, laboratory one hour per week. Half second semester. (MISS CHINN)

12. **Physiological Chemistry, Chemistry of Digestion and Assimilation.** Lectures and laboratory. Presents essential chemical facts concerned in life processes; means of repair; growth maintenance by animal cell and by human body. The laboratory work will include experiments in fermentation, respiration, salivary, gastric, pancreatic and intestinal digestion; absorption; excretion. Prerequisites: General Chemistry, Organic Chemistry, Qualitative and Quantitative Chemistry, Household Chemistry.

3 credits. Lectures three hours per week, laboratory six hours per week. First semester. Work may be elected second semester.
(MISS SWEENY)

13. Teaching of Home Economics. A course of lectures and practical demonstration, supplemented by practical teaching, marketing for departments, methods of presenting the subject of Home Economics; introdution of cooking and sewing into elementary and secondary schools. 2 credits. Lectures two hours per week or their equivalent in laboratory hours. First and second semesters. (MISS SWEENY)

14. Hand Sewing. Complete course in hand sewing, practice in fundamental stitches, including patching, darning, making button holes, hemming, hemstitching, ornamental stitches, etc., applied on models and simple hand-made articles, such as sewing apron, towel and corset cover. Study of the history and manufacture of needles, pins, scissors, sewing machines, etc. Primitive conditions, implements and materials. No credit. Lecture one hour per week, laboratory four hours per week. First semester. (MISS BUCKMAN)

15. Elementary Clothing. Freshman. Machine and hand sewing, drafting of patterns, cutting and making of undergarments, shirt waists and wash dresses. Study of cost, durability and suitability of materials and trimmings, comparison between ready-made and home-made garments. Prerequisite 14, or its equivalent in high school (release from this requirement only upon advice of the Head of the Department). 1.5 credits. Laboratory six hours per week. Second semester.
(MISS BUCKMAN)

16. Textiles. Lectures and text-book course. Primitive forms of textiles and industries are considered and their later development made clear. Growth, manufacture, and finishing of cotton, wool, silk, linen and other fibres, their properties, adulterations, etc., discussed. Quality and economy in buying, and clothing budgets discussed. .5 credit. Taken parallel with 15. Lecture one hour per week. Second semester.
(MISS BUCKMAN)

17. Dress Making. Sophomore. Designing, cutting and making of wool and silk or other fancy dresses. Laboratory practice in selection of fabrics, names, kind, weaves, widths, prices and fibre. Hygiene of clothing, removal of stains, dyeing and cleaning, color design and economy in dress. 1.5 credits. Two sections. Lectures one hour per week, laboratory four hours per week. First semester. (MISS BUCKMAN)

18. **Home Decoration.** Sophomore. Planning and furnishing of a six room house at stipulated cost. Color plans made in water colors for the rooms. Study of color combinations, effect of color and practical application in the home. Stenciling applied on household articles, basketry in raffia and reed. Visits to stores. Prerequisite, Free-hand drawing. 1.5 credits. Two sections. Lectures one hour per week, laboratory four hours per week. Second semester. (MISS BUCKMAN)

19. **Millinery.** Sophomore. A study of the making and covering of hat frames and trimming for winter and summer hats; renovating and making over. Practical and artistic principles of millinery applied. 1 credit. Two sections. Laboratory four hours per week. Second semester. (MISS BUCKMAN)

20. **Tailoring and Advanced Dressmaking.** Junior. A course including instruction in the making of a coat and dress or coat suit and waist. All the essentials of cutting, fitting, pressing and finishing, as done by a tailor, are taught. Dress forms are made and practice work in design in paper given. 1 credit. Laboratory four hours per week. First semester. (MISS BUCKMAN)

21. **Historic Study of Costumes.** Junior. This course includes the study of early and modern costumes adapted to needs of dressmaker or domestic art teacher. Taken in connection with Home Economics 20. .5 credit. Lecture one hour per week. First semester. (MISS BUCKMAN)

22. **Textiles.** Junior. This is a laboratory course, dealing with textile adulteration and dyeing, laundry, etc. 1 credit. Laboratory four hours per week. Second semester. (MISSES BUCKMAN AND SWEENY)

23. **Art Needlework.** Senior. This is an advanced course in hand needle work, including various kinds of embroidery, crochet and tatting applied on garments—one of which must be a fancy waist—and household articles. Artistic judgment in choice of color and design cultivated. 1 credit. Laboratory four hours per week. First semester. (MISS BUCKMAN)

24. **Thesis.** Senior. Practical research and reference work. 2 credits. Second semester, (MISS BUCKMAN)

NOTE:—In clothing and dressmaking courses students provide all materials for garments and household articles, subject to approval of instructor.

25. **Teaching of Home Economics.** Course especially designed to meet the needs of students taking only two years in Home Economics

work, to instruct them in the presentation of cooking and sewing in elementary and secondary schools. Lectures two hours per week. Second semester. (MISSES SWEENY, CHINN, BUCKMAN)

26. Journal Club. A weekly study and discussion of the current periodical literature in Home Economics, supplemented with the reading of papers upon lines of research of interest and value to students in this line of work. Matriculation limited to Seniors. 1 credit. One hour per week. Throughout the year. Elective.

27. Survey Course. Arts and Science students only. To meet the requirement of the College of Arts and Science that all women matriculates must present two credits in Home Economics for graduation, the survey course has been arranged. It consists of one full year's work of two lecture periods per week, or their equivalent in laboratory periods. The year is divided into three equal parts, one of which is given to hand-sewing, one to practical cookery, and one to household sanitation.

The hand-sewing course consists of lecture work, including directions for the making of all fundamental hand stitches; history and manufacture of implements and materials used. Stitches are applied on garments, such as fancy aprons and corset covers. Patterns for these are drafted. Lectures one hour per week; laboratory two hours per week. For one-third of the year. (MISS BUCKMAN)

The practical cookery course consists of lectures and laboratory practice designed to acquaint the student with the composition of and the principles of cooking typical food materials. Lectures one hour per week, laboratory two hours per week. For one-third of the year. (MISS CHINN)

The household sanitation course consists of lecture work upon the function of sanitation in every day life, the relation of the individual home to the community, the safety of the water supply, the disposal of household and city sewage, physiological effect of bad housing, insufficient light, poor ventilation, and the consequent spread of disease, contamination of the milk supply and its result upon infant mortality, etc. Lectures two hours per week. For one-third of the year. (MISS SWEENY)

28. Experimental Cookery. A course in which by the application of the scientific principles of chemistry and physics the best, cheapest and most efficient methods of cooking foods are determined. Comparative studies of the value of similar foods in relation to their cost and labor

of preparation are made. Prerequisites 1, Chemistry 1 and 2. 1 credit. Laboratory four hours per week. First semester. Elective.

(MISS CHINN)

SPECIAL CLASSES.

For students not registered for the required number of college hours. No college credit is given in these classes, and no regularly matriculated students in any college of the University are admitted except upon the advice of the Head of the Department and the permission of the Dean.

1. Elementary Cookery. A study of different kinds of fuel, use of stove, fireless cooker and labor-saving devices; to supply a working knowledge of processes of cookery, preparation of separate dishes, care of the kitchen, cost of food in relation to its nutritive value. Four laboratory hours per week. First semester. (MISS WHITE)

2. Advanced Cookery. This course is designed to train the pupil in the planning, cooking and serving of breakfasts, dinners, suppers and luncheons, upon limited cost; the using of left-overs, keeping of household accounts, etc. The student entering this course is supposed to have had training in home cooking or a course equivalent to Course 1. Laboratory four hours per week. Second semester. (MISS WHITE)

3. Home Marketing. A course for special students designed to acquaint them with the practical marketing of the family food supply, cuts of meat, choice of fruits and vegetables. Excursions to markets, groceries, fruiterers, wholesale establishments, etc. Two hours per week. First semester. Repeated second semester. (MISS WHITE)

TWO YEARS COURSE IN HOME ECONOMICS.

The Department of Home Economics feels that four years are required to obtain a comprehensive knowledge of the sciences underlying work in Food and Nutrition and Textiles and Clothing, yet it clearly recognizes the fact that there are many excellent young women who have been teaching academic subjects and who desire to obtain such training as will fit them to take up the subjects involved in Home Economics and teach them under supervision; yet for these young women a course extending over four years is prohibitive It is for such persons that this course is designed; also for those women who desire definite, concise, systematic knowledge regarding the home, who do not expect to teach and who cannot give four years of training to the subject. This course, it is believed, holds much benefit and training.

Applicants for admission to this course must be at least twenty-one years of age, must give evidence of high scholarship, and fulfill in every way the requirements of the Department for two year students.

It must be definitely understood that this short course does not lead to a degree, and no study taken in pursuing this course will be afterwards credited toward the full course leading to a degree, except when the student has presented satisfactory entrance credits for the four years course and has taken the work prescribed in the four years course or its equivalent.

The conditions relating to matriculation, fees, gymnasium, and other college duties and privileges are the same as those pertaining to full course students.

OUTLINE OF TWO YEARS COURSE IN HOME ECONOMICS.

For entrance conditions see page 182.

FIRST YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
English 1	105	English Composition	3		
Home Economics 1	175	Technology of Cooking	1	4	
Home Economics 3	176	Food Production and Manufacture	2		
Home Economics 14	178	Hand Sewing	1	4	
Education 1 or 2	104	Educational Psychology	3		
†Botany 7	153	Agricultural Botany	2	4	

Second Semester.

English 1	105	English Composition	3		
Home Economics 2	176	Home Cookery	1	4	
Home Economics 5	176	Marketing		2	
Home Economics 15	178	Elementary Clothing		6	
Home Economics 16	178	Textiles	1		
Education 1 or 2	104	Educational Psychology	3		
Course		To be assigned by Dean	2		

†May be elected.

SECOND YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Education 3	104	Philosophy of Education	3		
Economics	167	Rural Economics	2		
Physiology 1	94	General Physiology	3		
Home Econ. 4	176	Elementary Food Economics	1	4	
Home Econ. 7	177	Household Sanitation	3		
Home Econ. 17	178	Dressmaking	1	4	
†Home Econ. 20	179	Tailoring and Advanced Dressmaking		4	
†Home Econ. 21	179	Historic Study of Costumes	1		
†Home Econ. 23	179	Art Needlework		4	

SECOND SEMESTER.

Education 3	104	Philosophy of Education	2		
*Home Econ. 7	177	Household Sanitation	3		
Home Econ. 8	177	Household Management	3		
Home Econ. 11	177	Invalid Cookery	1	1	
Home Econ. 18	179	Home Decoration	1	4	
Home Econ. 19	179	Millinery		4	
Home Econ. 25	180	Teaching of Home Economics	2		

*Begins March 20th.
†May be elected.

School of Extension.

Professor Bryant.

THE TWO YEARS COURSE IN AGRICULTURE.

While the four years course in agriculture is not too long a course of preparation for those who expect to engage in agricultural pursuits, it is clearly recognized that there are many young men whose circumstances make it impossible for them to devote to their education as large an amount of time or money as is involved in the completion of a full college course.

An earnest man who desires to excel in his chosen occupation of farming may be greatly benefited by a less extended training in the Agricultural College. It is for such persons that this course is designed.

Applicants for admission to this course must be at least eighteen

years of age, and unless more than twenty-one years of age, must pass an examination in the common school branches, or bring High School or other satisfactory certificates for these branches.

Applicants who are over twenty-one are admitted without examination, on trial, provided they can write a creditable letter, can carry on ordinary arithmetical operations, and give evidence by their credentials and personal bearing of having a serious purpose in entering the course.

It should be clearly understood that this shorter course does not lead to a degree, and no study taken in pursuing this course will be afterwards credited toward the full course, leading to a degree, except when a student has presented satisfactory entrance credits for the four years course, and has taken the work prescribed in the four years course.

The conditions relating to matriculation, fees, military drill, gymnasium practice, and other college privileges and duties are the same as those pertaining to full course students.

OUTLINE OF TWO YEARS COURSE IN AGRICULTURE.

FIRST YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Agronomy 9	146	Cereals	3	2	
Animal Husb. 2	149	Stock Judging	3	2	
*Botany 7	154	Agricultural Botany	2	4	
*Chemistry 1a	106	Agricultural Chemistry	2		
*English 1a	105	Agricultural English	3		
Zoology 11	157	Economic Zoology	3		

Second Semester.

Agronomy 11	146	Forage Crops	3	2	
Agronomy 17	147	Farm Mechanics	2	4	
*Botany 2a	153	Systematic Botany	2		
*Chemistry 1a	106	Agricultural Chemistry	3		
*English 1a	105	Agricultural English	2	2	
*Horticulture 1	165	Principles of Plant and Fruit Culture	2	2	
Horticulture 3	165	Vegetable Gardening			

*Required subjects.

SECOND YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Agronomy 5	145	Soil Physics	2	4	
Agronomy 12	146	Special Crops	2		
Agronomy 15	146	Course in Tobacco	By Ap.		
Agronomy 18	146	Farm Machinery	3	2	
Agronomy 20	147	Farm Engineering and Construction	3	2	
Animal Husb. 3	149	Advanced Stock Judging	3	4	
Animal Husb. 4	149	Study of Breeds	2	2	
Animal Husb. 5	149	Principles of Breeding	3	2	
Animal Husb. 11	150	Poultry Husbandry	3	2	
Botany 6	153	Plant Diseases	2		
Horticulture 2	166	General Pomology	2	2	
Veterinary Sci. 1	170	Anatomy and Physiology	4		

SECOND SEMESTER.

Agronomy 6	145	Soil Fertility	3		
Agronomy 15	146	Course in Tobacco	By Ap.		
Agronomy 19	147	Farm Motors	3	4	
Animal Husb. 6	149	Genetics	2		
Animal Husb. 7	149	Live Stock Feeding	3	2	
Animal Husb. 8	149	Dairying	3	4	
Animal Husb. 11	150	Poultry Husbandry	3	2	
Entomology 2	156	Economic Entomology	3		
Farm Management	163		3		
Veterinary Sci. 2	170	Applied Pathology	4		

THE FARMERS' SHORT COURSE—"FARMERS' WEEK.

This course is given during the first week in January. The week is occupied by the annual conventions of the various live stock breeders' associations of the State and of the State Horticultural Society, and the annual State farm products show, the tobacco and dairy show. Each stock breeders' association has its own program, which is largely furnished by the faculty of the College of Agriculture and men from this and other States distinguished in their particular lines. Each day judging schools in live stock and grains are conducted.

WOMEN'S COURSE OF HOME ECONOMICS.

This course is offered during Farmer's Week, in January, for four days, during which time many problems relating to the proper feeding of

the family, balanced menus, clothing and textiles, labor-saving devices capable of installation in the farm home, etc., are discussed.

In connection with the daily program, there is a competitive display of school lunches by the county schools of the State, of luncheons prepared by the high schools of the State, of dresses and undergarments made by individuals and classes in the grades of the elementary schools, and in addition many individual displays emphasizing all phases of home problems. Lectures, demonstrations and exhibits are offered daily by the professors in the Home Economics Department, their work being supplemented by lectures of government experts and Experiment Station specialists upon subjects of vital interest to the home.

BOYS' COURSE IN CORN PRODUCTION AND GRAIN JUDGING.

This course is conducted during "Farmers' Week," and consists of instruction by lectures and practical exercises in judging, testing and selecting grains. The matter of rural improvement, formation and management of boys' agricultural clubs, etc., is given particular attention. The boys will also participate in the State corn show.

THE SHORT WINTER COURSE IN AGRICULTURE.

This course begins the first of January of each year, and extends through a period of ten weeks, thus coming at a time when the farmers or their sons can most easily leave home. It emphasizes the practical and business aspects of farming and is intended to meet the needs of young men, either farmers or farmers' sons, who wish to secure a more thorough preparation for their life work, and is designed to give instruction of the most helpful and practical kind.

As its primary object is to aid the man upon the business side of farming, not especially in the direction of academic scholarship, there are no examinations of admission as in the longer course. The applicant, however, must be at least seventeen years of age, and it is essential that he have a good common school education, and the more thorough and extensive his general education has been, the more benefit he will derive from the course. It is particularly important that he should have had good training in English and Arithmetic, as short course students are sometimes seriously handicapped by their deficiencies in these subjects.

Tuition is free to residents of Kentucky. Non-residents pay a nominal fee of $5.00 for matriculation. Information regarding this course may be had upon application to the Dean, College of Agriculture, Lexington, Ky.

SPECIAL COURSE IN THE CULTIVATION OF TOBACCO.

Tobacco has become one of the principal agricultural industries of Kentucky, and the City of Lexington, the greatest loose leaf tobacco market of the world. The College of Agriculture of the State University, located as it is in the center of the White Burley district, affords excellent opportunities for instruction in the cultivation, curing and marketing of tobacco. For the past several years, we have had a considerable number of applications on the part of our regular students in agriculture and others for special instruction in the cultivation of this important crop, and for some time short courses in this subject have been given in connection with the regular work of the Agricultural College, attracting students even from foreign countries and from points as far distant as South Africa. It has not been given the attention which it deserves, however, chiefly for the reason that the growing season of tobacco comes at a time of year when regular students are away from the University on their summer vacation. It has been decided, therefore, to offer as a regular part of the work of the Agricultural College, a special course in the cultivation, housing, curing and marketing of tobacco, beginning the first of March and ending with the Christmas holidays. In this way, opportunity will be afforded the student for the study of the tobacco plant during the entire period of its growth, from the sprouting of the seed until the crop is harvested and sold upon the market, and each student will be given the opportunity to participate in every single operation involved in the cultivation of tobacco, from the cleaning of the seed and the sowing of the plant bed, to the packing of the loose leaf in hogsheads, preparatory to shipment to the manufacturer.

Beginning the first of March, each year, and continuing throughout the season in the order named below, these studies in the cultivation of tobacco will include the cleaning of tobacco seed and germination tests; the preparation and care of the seed bed; preparation of tobacco land and transplanting; the use of fertilizers; methods of cultivation; a study of tobacco pests, such as cut worms, grasshoppers, bud worms, horn worms, etc., and methods of control and eradication; diseases of the growing plant, such as mosaic disease, frog eye, rust, wilt, etc.; seed selection and breeding; topping and suckering; ripening; harvesting of the crop; housing and curing, including a study of the disease incident to curing, such as house-burn, pole-sweat, stem-rot, white-steam, saltpeter, molds, etc.; stripping; grading and marketing.

Approximately the first three months of this course will be devoted

to the cleaning and preparation of the seed, germination tests, and the preparation and care of the seed bed. The work of the second three months will begin with the preparation of the ground for tobacco and with the transplanting of the young plant from the seed bed to the field and will include the practical methods employed in the cultivation of tobacco; the work of the last three months of this course will begin with the harvesting of the crop and will include all of the operations involved in the handling of the crop from this period on until it is finally disposed of on the market, such as curing, stripping, grading and packing. Each student will be expected to participate in every single operation involved in the cultivation of tobacco and each of them will have in his sole charge a small patch of tobacco, and at the end of the season his crop will be graded by some expert tobacco buyer on the Lexington market. In addition to this work of a practical character, lectures and class-room instruction will be provided upon such topics as the influence of soil and climate on tobacco, the characteristics of a good tobacco leaf of each of the various types produced in the United States, the classification of tobaccos, the distribution and the uses to which they are put in various manufacturing processes, the chemistry of curing and fermentation, economic studies in marketing, profits and yields.

This course of study is now open to all, young and old, regardless of educational qualifications. No fees are required of persons living in the State. Non-resident students will be charged a fee of fifteen dollars, payable in advance. For further information address Dr. Joseph H. Kastle, Dean of the College of Agriculture, Lexington, Ky.

School of Veterinary Science.

Professor Graham, Associate Professor Pontius, Associate Professor Crisler, Associate Professor Musselman, Mr. Brueckner.

The course in veterinary science has been established as a result of a demand for this type of training. Some students have completed the agricultural course and have then gone to a veterinary school for the completion of the veterinary course. In order to assist such students it is proposed to give two years of preliminary training in veterinary science, full credit for which will be allowed in recognized institutions where the degree may be obtained. This course is designed to give training in quality not below that given in the Freshman and Sophomore years at other universities.

The School of Veterinary Science is a department of the College of Agriculture. Students matriculating in same receive instruction in animal husbandry, chemistry, botany, bacteriology and embryology by the faculty of the College of Agriculture. All of these subjects are so arranged in the course that students will be given full credit at other institutions. The veterinary subjects are taught in the agricultural building and in the lecture and laboratory rooms of the biological laboratory.

Field Open to Qualified Veterinarians. The student having completed the course of instruction outlined in this curriculum can go to any four-years school and in two years receive his degree in veterinary science. There is a wide field of usefulness in this work, which may be enumerated as follows:

1. *General Practice.* In view of the fact that the value of the national live stock industry is estimated at millions of dollars, it becomes obvious that the graduate possessing fitness and qualifications for the protection of this industry will meet with a ready demand and substantial compensation for his services.

2. *Bureau of Animal Industry.* Veterinarians are in demand for meat inspection work and field work in the eradication of animal diseases by the United States Bureau of Animal Industry, at salaries ranging from $1,400 to $2,500 per year. These positions are obtained by competitive examinations.

3. *Army.* Veterinarians in the United States Army now have positions similar to that of a commissioned officer. The salary is $1,500 per year with a 10% increase for each five years service up to twenty years, with the privileges of a Second Lieutenant of the Calvary. These positions are most desirable, and at this time there is a bill reported favorably by the Military Committee in the lower house which will greatly increase the opportunities of the veterinarian in the army.

4. *City Milk and Meat Inspection.* Qualified veterinarians are being employed by cities to act as city milk and meat inspectors to guard the food supply of the people.

5. *Animal Husbandry.* Qualified veterinarians are called upon to act as counsel at the large breeding establishments and as guardians in the protection of the live stock industry.

6. *Instructors.* Teaching positions are frequently available in this line of work, as it is rapidly being felt that veterinary science is one of the essentials in the training of the agricultural or animal husbandry student.

7. *Experiment Stations.* There are many problems to be solved in connection with animal diseases which are being taken up by different experiment stations throughout the country. It is most essential that this work be in the hands of well trained veterinarians.

OUTLINE OF COURSE IN VETERINARY SCIENCE.

FRESHMAN YEAR.

First Semester.

Course.	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Animal Husb. 1	148	Elementary Study of Stock Judging and Study of Breeds	3	2	2.0
Botany 1	153	General Morphology	2	4	2.0
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
English 1	105	English Composition	3		1.5
Veterinary Sci. 1	169	Veterinary Anatomy	3	6	3.0
Veterinary Sci. 2	170	Veterniary Physiology	2		1.0
Veterinary Sci. 3	170	Review of Current Literature	1		.5
Veterinary Sci. 4	170	Histology	2	2	1.5

Second Semester.

Botany Ia	153	Morphology and Classification of the Seed Plants	2	4	2.0
Chemistry 2	97	Chemistry of the Metals	3	6	3.0
English 1	105	English Composition	3		1.5
Veterinary Sci. 1	169	Veterinary Anatomy	3	6	3.0
Veterinary Sci. 2	170	Veterinary Physiology	2		1.0
Veterinary Sci. 3	170	Review of Current Literature	1		.5
Veterinary Sci. 4	170	Histology	2		1.0

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Animal Husb. 4	148	Study of Breeds	2	2	1.5
Animal Husb. 5	148	Principles of Breeding	3	2	2.0
Bacteriology 1	151	General Bacteriology	1	4	1.5
Veterinary Sci. 1a	169	Veterinary Anatomy	3	6	3.0
Veterinary Sci. 3a	170	Review of Current Literature	1		.5
Veterinary Sci. 5	170	Pathology	2		1.0
Veterinary Sci. 6	170	Physical Diagnosis	2		1.0
Veterinary Sci. 7	170	Meat Inspection	2		1.0
Veterinary Sci. 9	170	Materia Medico and Therapeutics	2		1.0

SECOND SEMESTER.

Animal Husb. 6	149	Genetics	By. Ap.		
Animal Husb. 7	149	Live Stock Feeding	3	2	2.0
Animal Husb. 8	150	Dairying	3	4	2.5
Bacteriology 3	152	Bac. in Relation to Ani. and Plant Dis.	1	2	1.0
Veterinar Sci. 1a	170	Veterinary Anatomy	3	6	3.0
Veterinary Sci. 3a	170	Review of Current Literature	1		.5
Veterinary Sci. 5	170	Pathology	2		1.0
Veterinary Sci. 8	170	Hygiene	2		1.0
Veterinary Sci. 9	170	Materia Medico and Therapautics	2		1.0
Zoology 10	157	Economic Zoology	2	4	2.0
Zoology 14	158	Embroylogy	2	4	2.0

1. **Anatomy.** In presenting the subject of anatomy we recognize it as a fundamental study. The course will consist of three lecture periods per week and two laboratory periods of three hours each during the Freshman and Sophomore years. In the laboratory a study of the bones and their relation to the skeleton are carefully considered. This work is supplemented by demonstrations from mounted skeletons, prepared specimens and charts. Each student must properly dissect and pass an examination on the different organs of the body. Special stress is placed on the laboratory part of this course, as it is in the dissecting room that the student must obtain his practical working knowledge of anatomy. Osteology and myology are considered during the Freshman year; neurology and splanchnology during the Sophomore year. Sisson's *Veterinary Anatomy* will be used as a text. (PONTIUS)

2. **Physiology.** Physiology is the science that teaches of the functions of the various tissues and organs of the animal body. In teaching the subject the work is arranged in a systematic manner, presenting to the veterinary student the essentials, thus enabling him to obtain a comprehensive view of the subject. The work covers the two terms of the Freshman year and consists of two lectures per week, supplemented by charts, papier-mache models, prepared specimens, etc. It is taken up in the following manner:

(1) *Circulation:* Includlng (a) Blood circulation, involving a study of the physical and chemical properties of blood, with practical laboratory demonstrations; the heart, including a study of the cardiac cycle and the nervous mechanism of the heart; vasomotor phenomena of blood vessels; circulatory functions, with special reference to metabolic changes and blood pressure. This work is supplemented by practical laboratory exercises on the various experimental animals, demonstrating normal blood

pressure under stimulating and inhibitory conditions. (b) Lymph circulation, a study of the composition, functional value and assimilative functions of lymph; the factors that contribute to and promote lymph flow

(2) *Respiration:* Including the anatomy of the respiratory apparatus; mechanical phenomena of respiration, physical and chemical modification of inspired and expired air; blood and tissue changes as a result of respiration; enervations of the respiratory movements.

(3) *Digestion:* Including (a) Food. (b) Mouth digestion, a study of prehension; mastication; saliva and salivation, with laboratory exercises demonstrating flow of saliva; deglutition. (c) Stomach digestion, an anatomic and histologic consideration of stomach digestion; the phenomena of gastric secretion; stomach enzymes and ferments; digestive changes in stomach; vomiting; rumination; mechanics of rumination. (d) Intestinal digestion, the anatomic consideration of intestinal digestion; intestinal secretion; mechanics of intestinal peristalsis; pancreatic juice and constituents; the liver, including an anatomic and histologic consideration of the liver, phenomena of bile secretion, physical and chemical properties of bile, nervous control of bile secretion, hepatic metabolism and eliminative power. (e) Absorption of nutrients, means of absorption, stomach absorption and intestinal absorption. (f) Bowel elimination. Work is supplemented by laboratory exercises in digestion.

(4) *Ductless Glands.* A study of the phenomena of internal secretions and functions of the spleen, thyroids and parathyroids, thymus, adrenals, and pituitary body.

(5) *The Skin.* Anatomic and histological consideration of skin; skin modifications and functions; secretory functions, including sudoriferous secretion and sebaceous secretion or sebum; skin absorption.

(6) *Urine.* Anatomic and histological consideration of the urinary tract; mechanism of the urinary secretion; blood pressure variations and their influence on secretion of urine, with laboratory exercises; composition of urine; quantity and physical character of the urine of the various domesticated animals; micturition.

(7) *Nutrition.* Constituents of the body; metabolism-fats, carbohydrates, proteids and salts; nitrogen, oxygen and carbon equilibrium and how maintained; starvation; subsistent diets for the various animals.

(8) *Animal Heat.* Source of body heat; seat of production; thermotaxis regulation; of body temperature; nervous mechanism; of heat regulation; normal temperatures.

(9) *Muscle.* Anatomic and histological considerations; physical properties; chemical constituents; muscular contraction; extensibility and elasticity; excitability and irritability; phenomena of muscular antagonism and co-ordination; rigor mortis; nervous mechanism of the musculature; this work to be supplemented by laboratory exercises.

(10) *The Nervous System.* (a) The central nervous system, anatomic and histologic considerations of the brain; functions of the cerebrum; of the cerebellum; of the medulla; of the spinal cord; ganglionic functions. (b) The peripheral nervous system, anatomic consideration of nerves and their ganglia; distribution and function of cranial and spinal nerves; ganglionic significance; phenomena of transmission of nervous impulses; the sympathetic system, including anatomical connection with cerebro-spinal system; ganglionic significance; reflex functions. Supplemented by laboratory exercises.

(11) *The Senses.* (a) Sight, anatomical and histologic consideration; the refractive mechanism of the eye; the phenomena of visual accommodations; visual stimuli and sensations; special nervous supply. (b) Hearing, the ear; nature and action of sound waves; auditory sensations; special nervous mechanism. (c) Smell, nasal cavities; anatomic considerations; olfactory sensations; special nervous mechanism. (d) Taste, nervous mechanism of taste; phenomena of gustatory sensations. (e) Cutaneous, sensations, including touch, temperature and pain sensations. (f) Phenomena of muscle sense. (g) Physiology of thirst and of hunger.

(12) *Locomotor Apparatus:* Anatomic consideration; locomotion the result of applied physics; cooperative antagonism; the mechanics of progression; function of the anti-concussion mechanisms of the limbs.

(13) *Growth, Decay and Death:* (a) Growth, nutritional influences during foetal life and the phenomena of post natal growth. (b) Decay, influenced by domestication. (c) Death, natural death rare; bodily functions performed at instant of death as result of shock to controlling centers; signs of death.

(14) *The Foot:* Anatomic considerations of each structure; histologic consideration of the sensitive sole and laminae and wall; the phenomena of weight bearing, and function of anti-concussion mechanism.

(15) *Reproductive Function:* (a) Embryologic and anatomic considerations. (b) Male reproductive functions; anatomic considerations; spermatogenesis; coition; nervous mechanism. (c) Female reproductive

functions; anatomic considerations; ovulation; coition; fertilization; gestation, parturition, nervous mechanism. (PONTIUS)

3. Review of Current Literature. A lecture course on current subjects of importance to veterinary students. It may involve subjects in anatomy, physiology, bacteriology, pathology, animal husbandry, sanitation, etc., and comprises a general review of the material which is not available in text books. One lecture per week. Throughout Freshman and Sophomore years. (GRAHAM)

4. Histology. This course treats of the cell as a unit of structure, of its functions, the classification and characteristics of the different body tissues, including epithelial cells, muscular tissue, nerve tissue, blood circulation, heart, blood cells, lymph cells, lymph nodes, bone marrow, spleen, bone, cartilage, synovial bursa, kidneys, ureters, bladder, urethra, adrenals, thymus, hair, sweat glands, oil glands, etc. Freshmen. Two lectures and two hours laboratory per week. Throughout the year. (HIMMELBERGER)

5. Pathology. Pathology treats of the cause of disease, its spread, means and manner of protecting and healing forces, inflammation and regeneration, methods of preparation and preservation of gross specimens, preparations of sections for microscopic study, general technique of laboratory diagnosis. Sophomore year. Two hours lecture work per week. Throughout the year. (GRAHAM, HIMMELBERGER)

6. Physical Diagnosis. This course consists of methods of diagnosis in detecting the presence of specific disease, including a general and systematic examination of the different systems of the animal body. Sophomore year. Two lecture hours per week. Laboratory demonstrations by appointment. First semester. (PONTIUS)

7. Meat Inspection. This course includes a study of the physical characteristics of animal organs; methods of slaughter; principles of preservation; effect of accidental and pathological conditions on meats for human consumption; putrefaction of meat and consequences of ingestion of such meats by man; transmissibility of disease to man through the flesh of animals, and the effect of cooking on the transmissibility of such diseases, together with a review of the meat inspection laws of the U. S. Department of Agriculture. Sophomore year. Two lectures per week. First semester. (ALLEN, GRAHAM)

8. Hygiene. This course will consist of a consideration of the practical methods of disinfection, disinfecting agents both chemical and physical, methods of dipping animals and dips, importance of quarantine

and sanitary regulations in the control of infectious and parasitic animal diseases. Review of State and National regulations affecting interstate shipment of animals. Sophomore year. Two lectures per week. Second semester. (MUSSELMAN, GRAHAM)

9. **Materia Medica and Therapeutics.** This course is introduced by definitions and a discussion of the composition of drugs, classifications of official preparations, incompatibilities and classification of all drugs employed in the practice of veterinary medicine. Each drug is then taken up in order of its classification and discussed in general detail. This is followed by a study of modes of action of drugs, the physiological laws governing the same, the absorption, elimination and methods of administration, dosage, idiosyncrasy; also the physiological and therapeutic actions, indications and contra-indications, toxicology and treatment of each therapeutic agent. Sophomore. Two lectures per week. Throughout the year. (CRISLER, SIMMONS)

COLLEGE OF CIVIL ENGINEERING

WALTER E. ROWE, DEAN.

GENERAL STATEMENT.

The College of Civil Engineering is composed of the School of Civil Engineering and the School of Rural and Highway Engineering.

The College of Civil Engineering is organized for the purpose of giving young men a thorough course of instruction in those branches most vital to the Civil Engineer. The course is planned to give the student a knowledge of the subjects which will enable him to develope rapidly into a skillful practitioner in any of the branches of the profession.

Civil Engineeriug deals with the subjects of Mechanical Drawing, Surveying, Railroad Location, Railroad Construction, Railroad Maintenance, Topographical Surveying, Hydraulics, Hydraulic Power Development, Irrigation, Roads, Paving, Highway Bridges, Railroad Bridges, Buildings, Water Supply, Dams, Drainage, Masonry Construction, Reinforced Concrete, Mill Buildings, Municipal Engineering, Contracts, and Specifications. In addition to the purely technical subjects included in the course, provision is made for the study of English, Mathematics, Physics, Chemistry, Geology, Government and Economics.

Brooks Civil Engineering Society.

The Brooks Engineering Society, named in honor of the former Dean of the College, is a flourishing organization, and gives abundant opportunity for the discussion of general and special engineering topics.

Transit.

For the past nine years the students of the College of Civil Engineering have published "The Transit." a monthly magazine. This is published in the interests of the College of Civil Engineering and is doing a good work in keeping the undergraduates and the alumni in close touch with one another.

EQUIPMENT.

Buildings.

Tne home of the College of Civil Engineering is in the Civil Engineering Building, which is a large three-story brick, trimmed with cut

stone, and having a floor space of about 40,000 square feet. The lecture rooms, offices, drafting rooms, and laboratories are all located in this building.

Drawing Rooms.

In the Civil Engineering Building there are three large well-lighted drafting rooms, provided with individual tables containing lockers for each student's outfit and cabinets for drawing boards. The walls of the drawing rooms are decorated with photographs of actual constructions, and a large collection of standard drawings of bridges, buildings, stadiums, railroad construction, sewer construction, water works, power plants, and irrigation structures are available for examination.

Laboratories.

Laboratories available to the student for experimental work in the testing of building materials of all kinds, and also a complete Road Laboratory for the purpose of testing materials used in the construction of permanent roads.

Libraries.

The general University library is available for the use of civil engineering students, but in addition to this general library, the College of Civil Engineering has a library specially designed to meet the needs of civil engineering students. The leading technical journals are also placed in the department library reading rooms.

Appartus.

The field and office equipment belonging to the College consists of thirteen transists, six engineer's levels, two solar attachments, one needle compass, one plane table, one precise pantograph, one plainmeter, one set of splines, eight hand levels, one sextant, one aneroid barometer, one set of railroad curves, level rods, cross-section rods, tapes, flags, and minor accessories.

DEGREES.

The course of study in Civil Engineering leads to the degree of B.C.E. (Bachelor of Civil Engineering). For information regarding the advanced degree of C.E. (Civil Engineer) see the statement of the Graduate School.

School of Civil Engineering.

OUTLINE OF FOUR YEAR COURSE LEADING TO THE DEGREE OF B. C. E.

FRESHMAN YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Mathematics 2	123	Trigonometry	5		2.5
English 1	105	English Composition	3		1.5
Drawing 1	203	Mechanical Drawing		10	2.5
Physics 3	130	Physical Measurements		4	1.0
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Military Science		Infantry Drill		3	.75
					10.75

Second Semester.

Mathematics 3	123	University Algebra	5		2.5
English 1	105	English Composition	3		1.5
Surveying 1	205	Land Surveying	2		1.0
Chemistry 1	97	General Inorganic Chemistry	3	6	3.0
Military Drill		Infantry Drill		3	.75
Drawing 3	203	Mapping		10	2.5
					11.25

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Applied Mechanics and Hydraulics 1-2	200	El. Strength of Materials and El. Mechanics	5		2.5
Sur. and Geodesy 1	205	Advanced Surveying	3		1.5
Physics 1a	129	Advanced Physics	3		1.5
Mathematics 4	123	Analytical Geometry	5	4	2.5
Physics 5a	130	Advanced Physics Lab.			1.0
Sur. and Geodsey 3	205	Field Practice		9	2.25
English 3	107	History of English Literature	3		1.5
Highway Eng. 1 and 1a	202-203	Roads and Road Lab.	2		1.0
Military Science		Infantry Drill		3	0.75
					14.5

*A credit represents one hour recitation or two hours laboratory per week for thirty-six weeks.

SECOND SEMESTER.

English 3	107	History of English Literature	3		1.5
Mech. Drawing and Descriptive Geo. 2	203	Descriptive Geometry	5		2.5
Physics 2a	130	Advanced Physics	3		1.5
Mathematics 5	123	Calculus	5		2.5
Mathematics 4	123	Analytical Geometry	5		2 5
Physics 6a	131	Advanced Physics. Lab.		4	1.00
Bridge Eng. 1	201	Roof Truss Design		10	1.25
Military Drill		Infantry Drill		3	.75
					13.5

JUNIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Bridge Eng. 3	201	Bridge Stresses	3		1.5
Applied Mec. and Hydraulics	201	Hydraulics	2		1.0
Applied Mec. and Hydraulics 3	200	Advanced Strength of Materials	5		2.5
Mathematics 5	123	Calculus	5		2.5
Bridge Eng. 4	201	Graphic Statics	3		1.0
Geology 6	111	Economic Geology	2		1.0
Sur. & Geodsey 4	205	Topographical Surveying		13	3.0
					12.5

SECOND SEMESTER.

Bridge Eng. 3	201	Bridge Stresses, half semester	5		1.25
Applied Mec. and Hydraulics 4	200	Analytical Mechanics	5		2.5
Ry. Engineering 1	204	Railway Location, half semester	5		1.25
Ry. Engineering 2	204	Railway Construction, half semester	5		1.25
Bridge Eng. 5	201	Highway Bridge Design, half semester		8	1.0
Construction 1	202	Masonry Construction, half semester	5		1.25
Metallurgy 15		Metallurgy of Iron and Steel	2		0.75
Metallurgy 1		Assaying, half semester	2	4	1.25
Railroad Eng.	204	Railway Field Practice, half semester		13	1.5
Mathematics 6	124	Spher. Trig. and Least Squares	2		1.0
					13.0

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Sur. and Geodsey	205	Geodesy	3		1.5
Construction 3	202	Masonry Dams and Retaining Walls	5		2.5
Construction 2	202	Reinforced Concrete	5		2.5
Ry. Engineering 3	204	Railway Maintenance	3		1.5
Bridge Eng. 7	202	Railway Bridge Design	2	13	5.0
Political Sci. 1	115	American Government	3		1.5
					14.5

SECOND SEMESTER.

Mun., Water Power and San. Eng. 1	203	Water Power Engineering, half sem.	5		1.25
Highw'y Eng. 1 & 2	208	Roads, Streets and Pavements, half sem	5		1.25
Mun., Water Power and San. Eng. 3	209	Sanitary Engineering, half semester	5		1.25
Contracts, Spec. and Thesis 1, 2, 3	202	Contracts, Specifications and Thesis			6.0
Bridge Eng. 7	202	Railway Bridge Design, half semester		13	1.5
Highway Eng. 2a	203	Asphalt Laboratory, half semester		4	0.5
					11.75

DEPARTMENTS OF INSTRUCTION.

APPLIED MECHANICS AND HYDRAULICS.

1. Elementary Strength of Materials. Elastic and ultimate strength; general properties; moments for beams; cantilever and simple beams; columns and struts; the torsion of shafts; elastic deformation; resilience of materials; reinforced concrete. Five hours per week. First half of first semester. (TERRELL)

2. Elementary Mechanics. Concurrent forces; parallel forces; center of gravity; resistance and work; simple machines; gravity and motion; inertia and rotation. Five hours per week. Second half of first semester. (TERRELL)

3. Advanced Strength of Materials. A study of the principles and applications to engineering of the mechanics of solids, as related to the mutal actions, motions, pressures, strength, stiffness, and resilience of the members of structures and machines. Five hours per week. First semester. (FRANKEL)

4. Analytical Mathematics. Statics of a material point; statics of a

rigid body; statics of flexible cords; rectilinear motion of a material point; moment of inertia; dynamics of a rigid body; work, energy, power, and friction, Five hours per week. Second semester. (FRANKEL)

5. **Hydraulics.** This course consists of text book exercises together with the solution of numerous problems covering the principles of hydrostatics and hydrodynamic pressure, the flow of water through orifices, nozzels, over weirs and through pipes and open channels, also the loss from friction and other sources. Two hours per week. First semester. (ROWE)

6. **Irrigation and Drainage.** Grades, cross-section and capacity of canals; surveys, designs of structures, dams, conduits, levees, etc. Lectures, readings and collateral reports. Two hours per week. First semester, (ROWE)

7. **Material Laboratory.** Testing of wood, iron, steel, and cement. This course is given in connection with the work in Advanced Strength of Materials. Four hours per week. First semester. (CURTIS)

BRIDGE ENGINEERING.

1. **Roof Truss Design.** The design of a simple steel roof truss is taken up and design sheets and complete shop drawings are made and traced. Drawing, ten hours per week. First half of second semester. (ROWE)

2. **Roof Truss Design.** Same as Course 1. Drawing, ten hours per week. First half of second semester. (ROWE)

3. **Bridge Stresses.** This course takes up the analytical method of finding stresses in roof and bridge trusses and consists of the following: Roof trusses under dead and wind loads, final stresses for bridge trusses, bridge, bracing, members and floors. Three hours per week, first semester; five hours per week, first half of second semester. (CARREL)

4. **Bridge Tresses.** Graphic Method. Principles and methods, roof trusses, bridge trusses, locomotive wheel loads, trusses with broken cords, miscellaneous trusses. Drawing, six hours per week. First semester. (CARREL)

5. **Highway Bridge Design.** Complete design and shop drawings for highway bridge. Drawing, eight hours per week. First half of second semester. (ROWE)

6. **Mill Building.** The design of mill buildings are taken up in this course, and also the study of railroad trestles, mine structures, grain elevators, towers, tanks, etc, Five hours per week. Second semester. (CARREL

7. Railroad Bridge Design. Complete designs and details for single track railway bridge. Recitations, lectures, and drafting room periods. Drawing, thirteen hours per week, first semester; drawing, ten hours per week, first half of second semester. (CARREL)

CONSTRUCTION.

1. Masonry Construction. Properties of stone, brick, cement, and concrete and their uses in engineering structures. Foundations, retaining walls, piers and abutments, dams and chimneys, the design of masonry structures, including arches, dams, etc. Five hours per week. Second half of second semester. (TERRELL)

2. Reinforced Concrete. Determination of forms and proportions. Lectures, recitations, computations, and drawings. Design of columns, beams, and a complete design of an arch of reinforced concrete construction, including its abutment and centering. Five hours per week. First semester. (ROWE)

3. Masonry Dams. Theory and designs of retaining walls, and masonry dams. Lectures, recitations and designs. Five hours per week. First semester. (TERRELL)

CONTRACTS, SPECIFICATIONS AND THESIS.

1. Contracts. Offer and acceptance, consideration, contracts under seal, assignments, joint and several contracts, the statute of frauds, conditions, impossibility, illegality, discharge of contracts. Two hours per week. First semester. (ROWE)

2. Specifications. A detailed study of various specifications. The student is required to write and discuss several specifications. One hour per week. First half of second semester. (ROWE)

3. Thesis. The object of the thesis is to determine the student's ability to enter upon a course of independent investigation and thus to apply some of the fundamental principles of engineering previously studied.

HIGHWAY ENGINEERING.

1. Highway Engineering. Location of country roads, earthwork, drainage and culverts, bridges, retaining walls, reconstruction and improvement of country roads, maintenance, staking out the work, specifications and contracts; implements and prices. Two hours per week. First semester. (TERRELL)

1a. Road Material Laboratory. Testing of Rock, Gravel, Sand and other road building material. This course is given in connection with Highway Engineering, 1 and 2.

2. Streets and Pavements. Pavements: materials employed in the construction of pavements, resistance to traction. Lectures, assigned readings, specifications, contracts and reports. Five hours per week. First half of second semester. (TERRELL)

2a. Asphalt Laboratory. Testing of Asphalt, Road Oils, Bituminous Binders, Dust Preventatives, as pertaining to the interpretations of specifications. This course is given in connection with Roads, Streets and Pavements. Four hours per week. First half of second semester.

MECHANICAL DRAWING AND DESCRIPTIVE GEOMETRY.

1. Mechanical Drawing. Detail and dimension drawing, pen topography, free hand and mechanical lettering. Drawing ten hours per week. First semester. (NOLLAU)

2. Descriptive Geometry. A study of the representation of lines, planes, surfaces, and perspectives. Lectures, recitations, drawings, and assigned problems. Recitations five hours per week; drawing three hours per week. Second semester. (NOLLAU)

3. Mapping. An elementary course as pertaining to Civil Engineering, including platting angles by chord, tangents and protractor, laying off curves, platting land surveys, topographical and stadia notes, making profiles, laying grade lines. Ten hours per week. First half of second semester. (TERRELL)

4. Railroad Drafting. A preliminary course to that of Field Location. In this course, a complete set of notes is turned over to the student and he is required to make the most economical paper location. Four hours per week. First half of second semester. (TERRELL)

MUNICIPAL, WATER POWER AND SANITARY ENGINEERING.

1. Water Power Engineering. This course consists of three classroom exercises per week during the second semester. The work embraces a detailed study of rainfall, run-off, storage, and the design and construction of water power works. Three hours per week. Second semester. (ROWE)

2. Water Supply and Water Works Supply. Requisites of supply, source of supply, rainfall, surface water, rivers and lakes, ground water

gravity systems, pumping engines. Design, construction, and maintenance. Two hours per week. Second semester. (ROWE)

3. **Sanitary Engineering.** Sewerage systems, separate and combined, hydraulics of sewers, determination of size and capacity, surveys for drainage systems, design of system in detail, specifications and estimates of cost, inspection of work, methods of disposal, irrigation, filtration, chemical precipitation, bacteriological methods, house drainage, garbage disposal. Five hours per week. Second semester. (ROWE)

RAILWAY ENGINEERING.

1. **Railway Location.** This course consists of the study of economic methods of railway location, together with the actual location of a line several miles in length, including reconnaissance, preliminary survey, topography, maps, projecting the location, making approximate estimates, and final location. Five hours per week. First half of second semester. (TERREL)

2. **Railway Construction.** The work in construction will consist of lectures, recitations and assigned readings in connection with office and field work, including cross-sectioning, calculation of quantities, haul, monthly and final estimates. A complete estimate of quantities and cost of line are made. Five hours per week. Second half sccond semester. (TERRELL)

3. **Railway Maintenance.** Construction and maintenance of track and accessory structures, The improvement of gradient and alignment. The design and maintenance of yards and terminals. Lectures, recitations, and assigned readings. Three hours per week. First semester. (TERRELL)

4. **Economics of Railway Operation.** Organization. Relation of management and operation departments to construction and maintenance departments. Block signalling and interlocking. Rapid transit. Employment, education and discipline of force. Accounts and accounting. Reports. Betterment. Two hours per week. Second semester. (ROWE)

5. **Summer Camp.** Each year, two weeks previous to registration in September, all civil engineering Juniors, Sophomores, and Seniors will go into camp at some suitable location, for the purpose of engaging in railroad field practice, hydrographic surveying, and geodetic field practice. Eight hours per day. For two weeks. (ROWE AND TERRELL)

SURVEYING AND GEODESEY.

1. **Land Surveying.** An elementary course in land surveying methods and the use and care of surveying instruments, with recitations, lectures, and field practice. The field work affords practice in the use of chain, tape, compass, transit and level. Two hours per week. Second semester. (TERRELL)

2. **Field Practice.** Field practice in connection with Course 1, in Land Surveying. Field work ten hours per week. Second half of second semester. (TERRELL, CARR)

3. **Advanced Surveying.** The course in advanced surveying includes hydrographic surveying, stadia methods, tringulations, photographic surveying and methods of mapping extended areas. Three hours per week. First semester. (CARREL)

4. **Topographical Surveying.** The use of the hand level, plane table, stadia, and other instruments used in making topographical surveying are studied by means of recitations, lectures, and field practice. A complete topographical survey is made, including field information, calculations, and a complete map. Field work and laboratory, thirteen hours per week. First semester. (TERRELL)

5. **Geodesey.** Theoretical study of methods in making geodetic surveys. Base-line measurements, measurement of angles, horizontal and vertical; field methods for time, latitude, longitude, and azimuth. Students are required to make and reduce observations illustrating the work of the course. Three hours per week. First semester. (CARREL)

COURSES FOR GRADUATES.

Railway Location and Construction.	Bridge Design.
Yards and Terminals.	Reinforced Concrete.
Motive Power and Rolling Stock.	Water Power Development.
Railway Operation and Management.	Engineering Jurisprudence.

Metallic Arches.

School of Rural Highway Engineering.

Professor Rowe, Professor Terrell.

Aims.

The primary object of this course is to provide instruction for young men along useful lines of engineering usually neglected or little emphasized in our universites. The aim is to educate young men who, after

receiving this special training at the University will take up some line of constructive engineering which will result in better roads, bridges, and farm structures for the country and better streets and sanitary conditions for the towns and cities of the Commonwealth.

County Appointments.

In order to encourage young men to study rural and highway engineering each county in the State grants two free scholarships in the College of Civil Engineering for the purpose of taking this course. These scholarships are awarded by the Fiscal Courts of the respective counties. Appointments to this course are made prior to the first day of September in each year and are good only for Rural and Highway Engineering. Students desiring to secure one of these appointments should make application to the County Judges of their respective counties, stating their educational qualifications and that they desire the appointment for the course in Rural and Highway Engineering.

Admission.

Applicants for admission to the Rural and Highway Engineering Course will be required to have a good knowledge of English, Elementary Algebra, Elementary Physics and Plane Geometry. Students taking this course will not be considered candidates for a degree.

OUTLINE OF COURSE IN RURAL AND HIGHWAY ENGINEERING.

FIRST YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Drawing 1	208	Mechanical Drawing		12	3.0
Mathematics 2	123	Trigonometry	5		2.5
Physics 1	129	General Physics	3		1.5
English 1	105	English Composition	3		1.5
					8.5

Second Semester.

Bridge Eng. 1	207	Bridge Stresses	3		2.5
Mathematics 3	123	University Algebra	5		2.5
Bhysics 1	129	General Physics	3		1.5
Surveying 1	209	Land Surveying	2		1.0
Drawing 1	208	Mechanical Drawing		12	3.0
Mapping 1	203	Mapping		4	1.0
Highway Eng. 1	208	Road Location and Construction	5		2.5
					14.0

*A credit represents one hour lecitation or two hours of laboratory per week for thirty-six weeks.

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Highway Eng. 2	208	Highway Maintenance	5		2.5
Surveying 2	209	Advanced Surveying	3		1.5
Bridge Eng. 5	201	Highway Bridge Design		8	1.4
Highway Law 1	208	Com. Study of Road Law	2		1.0
					9.0

SECOND SEMESTER.

Municipal Eng. 4	209	Streets and Pavements, half semester	5		1.25
Cement and Its Uses 3	208	Plain and Reinforced Concrete	3	4	2.5
Bridge Eng. 5	201	Highway Bridge Design		8	4.0
Law of Contracts and Specifications	202	Contracts and Specifications, half sem.	1		.25
Construction 1	202	Masonry Construction	5		2.5
					10.50

DEPARTMENTS OF INSTRUCTION.

APPLIED MECHANICS.

1. **Elementary Strength of Materials.** Elastic and ultimate strength, general properties, moments for beams, cantilever and simple beams, columns and struts, the torsion of shafts, elastic deformation, resilience of materials, reinforced concrete. Five hours per week. First half of first semester. (TERRELL)

2. **Elementary Mechanics.** Concurrent forces, center of gravity, resistance and work, simple machines, gravity and motion, inertia and rotation. Five hours per week. Second half of first semester. (TERRELL)

BRIDGE ENGINEERING.

1. **Bridge Stresses.** The subject of bridge stresses will be taken up both from an analytical and graphical standpoint as outlined in the course offered to civil engineering students.

2. **Bridge Design.** Complete designs of various types of steel highway bridges will be made, including weights and probable cost of structures. Five hours per week. Throughout the year. (ROWE)

3. **Reinforced Concrete.** The design of reinforced concrete culverts, slab bridges, and the design of a reinforced concrete highway bridge. Five hours per week. First semester. (ROWE)

CEMENT AND ITS USES.

1. **Study of Cement.** A study of the properties and uses of cement in making walks, curbs, building block, silos, fence posts, and general farm buildings. Lectures and laboratory practice. Five hours per week. First semester.

2. **Cement Testing.** Testing various samples of cement for tension and compression. One hour per week. Second semester. (TERRELL)

3. **Reinforced Concrete.** Determination of forms and proportions. Lectures, recitations, computations and drawings. Design of columns, beams, and the complete design of a reinforced concrete arch, including its abutments and centering. Five hours per week. Second semester.

COMPARATIVE STUDY OF ROAD LAWS AND RECENT ROAD LEGISLATION.

1. **Road Laws.** This course of study consists of a systematic study of the road laws of the various states. Two hours per week. Second semester.

DRAWING.

1. **Mechanical Drawing.** Geometrical drawing, geometrical problems, detail and dimensions drawing, pen topography, free hand and mechanical lettering. Thirteen hours per week, throughout the year. (TERRELL)

2. **Frame Structures.** Design of dwellings and other framed structures, together with plans, specifications and estimates of probable costs. Five hours per week. Setond semester.

HIGHWAY ENGINEERING.

1. **Highway Location.** Principles and methods followed in locating highways. Location of several miles of road. Five hours per week. Second semester. (TERRELL)

2. **Highway Construction.** Methods of construction, materials to be used, and how to use them. Determining the size and kind of culverts, bridges and other openings in roadways. Five hours per week. Second semester.

3. **Highway Maintenance.** A study of the best methods to be followed in maintaining and keeping highways and bridges in good repair. Lectures, assigned reading, and reports. Inspection of roads in the vicinity of the University. Three hours per week. Second semester.

(TERRELL)

MUNICIPAL AND SANITARY ENGINEERING.

1. **Water Supply and Water Works Design.** See course in Civil Engineering. Two hours per week. Second semester. (ROWE)

2. **Sanitary Engineering.** See course in Civil Engineering. Five hours per week. Second semester. (ROWE)

3. **Farm Sanitation.** Designs for special problems; plumbing, water closets, baths, urinals, sewage disposal, water supply. Recitations, assigned readings, lectures and designs. Two hours per week. Second semester.

4. **Streets and Pavements.** Pavements, materials used in the construction of pavements, resistance to traction. Lectures, assigned readings and reports. Five hours per week. Second half second semester.

SURVEYING.

1. **Land Surveying.** An elementary course in land surveying methods and the use of surveying instruments, with recitations, lectures, field work. The field work affords practice in the use of chain, tape, compass, transit, and level. Two hours per week. Second semester.

(TERRELL)

2. **Topographical Surveying.** The use of hand level, the theory and use of the stadia and other instruments employed in making topographical surveys are studied. Surveys and maps are also made in connection with this course. Thirteen hours per week. First semester. (TERRELL)

THE SHORT WINTER COURSE IN HIGHWAY ENGINEERING.

This course begins the first week of January of each year and covers a period of two weeks. The primary objeet of this course is to give as much instruction as possible in so short a time to County Engineers, and other county officials who desire to take advantage of the opportunity. No fee is charged for the course and no educational qualifications are required.

COLLEGE OF MECHANICAL AND ELECTRICAL ENGINEERING.

FREDERICK PAUL ANDERSON, DEAN AND DIRECTOR.

INTRODUCTORY STATEMENT.

Thls college is organized for the purpose of giving to young men a comprehensive training in dynamic engineering. All fields of human endeavor dealing with the development, use and transmission of power are well defined, component parts of dynamic engineering.

The aim of the curriculum in this college is to prepare graduates for doing creditable work in such branches of mechanical and electrical engineering as are represented by the following activities:

Machine tool building; steam engine and steam turbine design and construction; gas engine design and manufacture; telephone engineering; design, construction, testing and installation of all classes of electrical apparatus and machinery; converting structural steel ınto bridges and buildings; the physical testing of all classes of building materials; steel making in all of its branches; glass making; heating and ventilation; central power plant design; illuminating engineering, hydraulic engineering; locomotive building; car building; automobile manufacture; pumping machinery building; development of steam and electric traction lines; designing isolated lighting and power plants for public buildings; architectural engineering and the design and operation of all plants manufacturing any apparatus or supplies for man's use.

The capable dynamic engineer should possess that knowledge to enable him most effectively to adapt the achievements of science and art to the use of mankind. The technical school, with courses of study of high standard, gives that fundamental training which makes possible brilliant and useful careers in the profession of mechanical and electrical engineering.

Ever since the organization of this department in June, 1891, there have been more available places for Kentucky men than there have been graduates and the demand for young men equipped for mechanical and electrical engineering work at the close of each college year is far in excess of the graduates.

It is difficult to conceive of a profession that offers in this age of industrial achievement such large opportunities for lives of usefulness and remuneration as dynamic engineering.

Kentucky has provided for her sons unusual facilities for gaining an education in mechanical and electrical engineering. No other State in the Union makes such liberal concessions to her young men to gain an education as Kentucky. A county appointed student not only gets his tuition, matriculation fees and room rent free, but the Legislature has actually provided that he receive his traveling expenses from his home to the college and return. The expenses for any resident of the State, whether he be appointed or not, are reduced to a minimum. Every young Kentuckian should recognize that the State has put at his command excellent facilities for obtaining an education in mechanical and electrical engineering. He should further appreciate the fact that the State is making provisions that would cost each student at least two hundred dollars a year for tuition should all the expenses of his training be received in a school not supported by State or federal aid.

EQUIPMENT.

Building.

Mechanical Hall is the home of the College of Mechanical and Electrical Engineering. It contains thirty thousand square feet of floor and is well arranged for all recitation, lecture, drawing and laboratory work.

The Shops.

The shops or mechanical laboratories are furnished power by a Hamilton-Corliss engine and the steam for this is supplied from a Babcock and Wilcox boiler in one of the independent boiler houses.

The equipment in the various shops is briefly indicated as follows:

The wood shop contains thirty benches, each with a complete set of bench tools; and twenty-two lathes, each with a complete set of wood-turning tools. Besides these, there are: a band saw, a jig saw, two circular saws, a trimmer, a mortising machine, and a grindstone.

The foundry contains a 30-inch cupola furnace, having a capacity of a ton of metal per hour, a brass furnace, twelve complete sets of moulder's tools, twelve benches, besides the ladles, flasks, clamps, core oven, pattern rack, and other equipment such as is used in practical foundry operation.

The blacksmith shop is equipped with twenty down-draft forges. With each forge there is a set of blacksmith tools. A power hammer is available for heavy work.

The machine shop contains nine lathes, two milling machines, one planer, two shapers, two drilling machines, one dry emery grinder, one electric drill grinder, one universal grinding machine, one sensitive drill, twelve vises for bench work in metal, an air compressor, two power hack saws, some pneumatic tools, and a small punch and shear.

The tool room is equipped with an assortment of such tools and supplies as are used in the shops. In connection with the shops there is a washroom containing lockers for the accommodation of the students.

Drawing Rooms.

Three well lighted and convenient drawing rooms are provided, one for freshmen, one for sophomores and juniors, and one for seniors.

Recitation Rooms.

The recitation rooms are as follows: Senior heat engineering, senior and junior electrical engineering and senior and junior mechanics of engineering. These rooms are all provided with stereopticons and two have projectoscopes.

Library.

The department library and reading room contains a good selection of technical books and many of the current scientific and engineering journals, all available to students.

Senior Room.

A handsomely furnished room known as the senior room is provided, which serves the purpose of a club room for reading and rest. The meetings of the Tau Beta Pi Association are held here.

Photographic Laboratory.

Commodious and convenient quarters are arranged for giving to seniors a good course in practical photography. The equipment consists of excellent cameras for all classes of subjects, and the facilities for making lantern slides, copies and enlargment are first class.

Blue Print Laboratory.

The attic of the administration part of Mechanical Hall is devoted to the art of blue printing. Large frames for sun and artificial printing are included in the equipment.

Offices.

Offices are provided for instructors.

STEAM AND GAS ENGINEERING LABORATORY.

The steam engineering laboratory is equipped with indicators, planimeters, gauges, pyrometers, reducing motion apparatus, scales, micro meters, tachometers, and other small apparatus. It contains a 40-horse power Houston, Stanwood and Gamble cross-compound throttling engine, a 10-horse power Corliss engine, a 25-horse power Buffalo Forge engine, a 35-horse power Westinghouse single-acting compound engine, a small slide-valve engine with a Stephenson valve gear, and a 10-horse power De Laval turbine. There are also two 4-horse power Fairbanks-Morse gasoline engines with gas attachments, and the necessary auxiliary apparatus for testing, a 35-horse power Atlas automatic cutoff engine, a 150-horse power Buffalo Forge tandem compound engine, a 200-horse power Wheeler condenser, which is so arranged that all engines in the main laboratory can be operated condensing. A testing plate has been arranged for holding down engines for commercial testing. An automobile testing plant has been installed which will make possible the testing of the largest automobile built.

There are two separate boiler houses. One contains a 50-horse power Babcock and Wilcox boiler and a No. 3 Dean pump. The boiler is used for heating and to supply steam to the Hamilton-Corliss engine, which furnishes power to the shops. The other boiler house is situated close to the steam laboratory, and a 100-horse power Babcock and Wilcox boiler has been installed. This boiler can furnish steam at 200 pounds pressure, and an elaborate equipment for boiler testing has been installed, including induced draft apparatus, barrels and scales for weighing water, and devices for burning oil and gas, as well as coal.

The engines are all equipped with friction brakes and apparatus for carrying on all sorts of tests of refinement in steam engineering.

ELECTRICAL LABORATORY.

The equipment for carrying on experimental and research work in electrical engineering is as follows:

Direct Current Generators.

One 10 kw. 125-volt, Crocker-Wheeler Company;
One 10 kw. 125-volt, General Electric Company;
One 3 kw. 125-volt, Northern Electric Company;
One 8.5 kw. 125-volt Edison type, General Electric Company.
One 2 kw. 125-volt, Fort Wayne Electric Company.

Alternating Current Generators.

One 7-5 kw. 220-volt, 2 or 3 phase, 60 cycle, Jas. Clark Jr. Electric Company.

One 33 kw. 1100-volt, single phase, 133-cycle, Fort Wayne Electric Company.

One 50 kw. 1100-volt, single phase, 133-cycle, Westinghouse Electric and Manufacturing Company.

One 2 kw. single, 2 or 3 phase, 110-volt, 60-cycle, Central Laboratory Supply Company.

Direct Current Motors.

There are several small machines, some of them built in the shops which, with some of the generators mentioned above, give a good equipment for laboratory work.

Alternating Current Motors.

One 2-horse power, single phase, 60-cycle, 110-volt, General Electric induction motor; two 5-horse power, 60-cycle, 220-volt 2 and 3 phase induction motors, James Clark Junior Electric Company; one Emerson ½-horse power, 110-volt. 60-cycle single phase induction motor.

Watt-Hour Meters.

The laboratory is equipped with one of each of the following: General Electric Company induction type; Fort Wayne induction type; Sangomo mercury type; Duncan commutator type.

Portable Indicated Instruments.

One induction type wattmeter; three dynamometer type wattmeters with a voltage multiplier and a current transformer; two Weston a. c. or d. c. voltmeters with multipliers; three Thompson voltmeters; one American d. c. voltmeter; one Queen d. c. voltmeter; one Weston d. c. voltmeter; three hot wire ammeters; two Weston millivoltmeters with 100 ampere and 500 ampere shunts; one Weston d. c. ammeter; three Thompson ammeters; one American d. c. ammeter; one Roller-Smith dynamometer type ammeter; one Leeds & Northrup electrydynamometer and one Queen electrometer.

Miscellaneous Equipment.

One Wagner 1½ kw. motor generator set for converting 110-volt 60-cycle, single phase alternating current to 125-volt direct current; one lifting magnet and one plunger magnet made in the shops; one Leeds & Northrup potentiometer; three Weston standard cells; one Rowland electrodynamometer with shunt box; four galvanometers; one torsion dyna-

mometer; one vacuum pump; two Wheatstone bridges; one standard condenser; four condensers made in the shops; two Universal Manufacturing Company flat rate controllers; Tesla coils; one set of Thordarson laboratory apparatus and a varied assortment of storage cells, primary batteries, resistances, keys and switches.

Telephone Equipment.

Two complete experimental outfits were furnished by the Western Electric Company a few years ago. One contains all the equipment necessary to demonstrate both "A" and "B" board operation in connecting and disconnecting two subscribers and the other contains all the equipment for the ordinary connections between two subscribers connected into the same station. In addition to these outfits several telephones were furnished in connection with a device for party line ringing.

Besides the equipment described above, the telephone laboratory is equipped with a small American Electric Telephone Company's operator's board equipped with both common battery and magneto apparatus and with a number of subscribers' instruments for use on each of these types of circuits. These subscribers' instruments are equipped with the proper choke coils and condensers for multi-frequency party line ringing.

There are also a four-party harmonic ringing equipment, donated by the Kellogg Switchboard and Supply Company; a two-line telephone train dispatching equipment furnished by the Western Electric Company; a two-line telephone train dispatching equipment furnished by the General Railway Signal Company and a four-line automatic telephone equipment supplied by the Automatic Electric Company.

Photometers.

One Queen stationary photometer, and one Sharp-Millar portable photometer.

Transformers.

Two 15 kw. Fort Wayne 1,100 to 110 or 55 volts;
One 600 watt Fort Wayne 1,100 to 110 or 55 volts.
Two 5 kw. Duncan 110 to 55, 110 or 220 volts;
One 5 kw. Thordarson 110 to 5,000, 10,000, 15,000, 20,000, 30,000 or 40,000 volts.

TESTING OF MATERIALS LABORATORY.

The facilities for the study of the physical characteristic of engineering materials are in part as follows:

Two hundred thousand pound Olsen, specially designed automatic,

autographic, motor-driven testing machine arranged for testing columns up to fifteen feet and transverse specimens up to twenty feet.

100,000 pound Riehle testing machine,
Automatic Cement Testing Machine, Fairbanks-Morse.
Standard Soapstone Moist Closet,
Copper Drying Oven,
Standard Steaming Apparatus,
Vicat Needle,
Set Gilmour's Needles,
Moulds, scales and accessories,
Automatic and autographic attachment,
Olsen's compression micrometer,
Olsen's Cylindrical Concrete Extension and compression micrometer,
Duplex Micrometer Measuring Instrument,
Duplex Compression Micrometer,
Olsen's Improved Deflection Instrument,
Improved Deal Deformer,
Duplex Measuring Micrometer,
Improved Deal Extensometer,
Universal Expansion Heads,
Standard rattler for the investigation of paving brick and materials of similar class.

COURSES OF STUDY.

The practical work extends over a period of two years, and includes experience in the wood shop, machine shop, foundry and forge shop. During this period the class-room work and drawing are preparatory to the theoretical studies taken up during the third and fourth years. The course in Mechanical and Electrical Engineering, as administered at the State University of Kentucky, may be considered as being divided into six parts, as follows: Drawing, Electrical Engineering, Heat Engineering, Mechanics of Engineering, Practical Mechanics and Collateral Activities.

DEGREES.

The courses of study in Mechanical and Electrical Engineering leads to the degree of B.M.E. (Bachelor of Mechanical Engineering).

For the advanced degrees of M. E. and E. E. see the announcement of the Graduate School.

MECHANICAL AND ELECTRICAL ENGINEERING COURSE LEADING TO THE DEGREE OF B. M. E.

FRESHMAN YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lap.	Credits *
English 1	105	English Composition	3		1.5
Mathematics 3	123	College Algebra	5		2.5
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Drawing 1	219	Mechanical Drawing		10	2.5
Drawing 2	220	Freehand Drawing		1	.25
Prac. Mech. 1	226	Wood Working		12	3.0
Military Science		Infantry Drill		3	.75

Second Semester.

English 1	105	English Literature	3		1.5
Mathematics 2	123	Trigonometry	5		2.5
Physics 4	130	Elementary Physical Measurements		4	1.0
Chemistry 2	97	General Inorganic Chemistry	3	4	2.5
Drawing 1	219	Mechanical Drawing		5	1.25
Drawing 2	220	Freehand Drawing		5	.25
Drawing 3	220	Descriptive Geometry	5		2.5
Prac. Mech. 2 & 3	226	Pattern Making and Foundry Work		8	2.0
Military Science		Infantry Drill		3	.75

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
English 3	107	History of English Literature	3		1.5
Mathematics 4	123	Analytical Geometry	5		2.5
Physics 1b	130	General College Physics	4		2.0
Physics 5b	130	Measurements in Mechanics and Heat	1	4	1.5
Surveying 1	205	Surveying, first half	2	2	1.25
Surveying 1	205	Surveying, second half	2		
Prac. Mech. 5	226	Lectures on Shop Practice	2		1.0
Drawing 4	220	Elementary Design		7	1.25
Prac. Mech. 4	226	Forge and Machine Shop Work, first half		8	2.25
Prac. Mech. 4	226	Forge and Machine Shop Work, sec. half		10	.75
Military Science		Infantry Drill		3	

*A credit represents one hour of recitation or two hours of laboratory per week for thirty-six weeks.

SECOND SEMESTER.

English 3	107	History of English Literature	3		1.5
Mathematics 4	123	Analytical Geometry	5		2.5
Mathematics 5	123	Calculus	5		2.5
Physics 2b	130	General College Physics	4		2.0
Physics 6b	130	Measurements in Elec. Sound and Light	1	4	1.5
Drawing 4	220	Elementary Design		6	1.5
Prac. Mech. 4	226	Forge and Machine Shop Work		10	2.5
Military Science				3	.75

JUNIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Mathematics 5	123	Calculus	5		2.5
Elec. Engin. 1	220	Elements of Electrical Engineering	5		2.5
Mech. of Engin. 1	224	Mechanics of Materials	5		2.5
Mech. of Engin. 2	224	Testing of Materials		2	.5
Mech. of Engin. 3	224	Kinematics	4		2.0
Mech. of Engin. 4	224	Kinematic Drawing		12	3.0
Mech. of Engin. 5	224	Slide Rule Practice	1		.5

SECOND SEMESTER.

Bridge Engin. 2	201	Graphic Statics, first half		6	.75
Chemistry 17	99	Gas Analysis, first half		2	.25
Mech. of Engin. 6	224	Analytical Mechanics	5		2.5
Mech. of Engin. 7	225	Machine Design		8	2.0
Elec. Engin. 2	220	Applications of Electricity	5		2.5
Elec. Engin. 5	221	Elementary Electrical Design, first half		6	.75
Elec. Engin. 6	221	Dynamo Design, second half		10	1.0
Heat Engin. 8	223	Steam Laboratory, first half, alt. weeks		2	.37
Heat Engin. 8	223	Steam Laboratory, second half		2	
Elec. Engin. 9	221	Electrical Lab. D. C., alt, wks., 1st half		2	.37
Elec. Engin. 9	221	Electrical Laboratory D. C., second half		2	
Metallurgy 14		Metallurgy of Iron and Steel, sec. half	2		.5

SENIOR YEAR.

A student to be eligible to any class scheduled for the Senior year must report for class work on September 15 and must have removed any conditions he may have in subjects scheduled for the three preceding years.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Applied Mechanics and Hydraulics	201	Hydraulics	2		1.0
Elec. Engin. 3	221	Alternating Currents	5		2.5
Elec. Engin. 7	221	Dynamo Design		4	1.
Elec. Engin. 10	222	Electrical Laboratory A. C.		2	.5
Heat Engin. 1	222	Thermodynamics	5		2.5
Heat Engin. 2 & 3	222	Valve Gears and Steam Boilers	5		2.5
Heat Engin. 6 & 7	223	Valve Gear Design and Boiler Design		6	1.5
Heat Engin. 9	223	Steam and Gas Engine Laboratory		2	.5
Collateral Activ. 5	228	Magazine Digest	2		1.
Collateral Activ. 6	228	American Society of Mechanical Engineers and American Institute of Electrical Engineers	1		.5

Second Semester.

Drawing 5	220	The. and Prac. of Photography, sec. half		2	.25
Elec. Engin. 4	221	Gen. and Trans. of Power, first half	5		1.25
Elec. Engin. 8	221	Transformer Design, first half		4	.5
Elec. Engin. 10	222	Electrical Laboratory A. C., first half		2	.25
Heat Engin. 4	223	Steam Engin. of Power Plants first half	5		1.25
Heat Engin. 5	223	Gas Engineering, first half	5		1.25
Heat Engin. 9	223	Steam and Gas Laboratory, first half		2	.25
Mech. of Engin. 8	225	Heating and Ventilating, first half	2		.5
Mech. of Engin. 9	225	Heating and Ventilating, Des., first half		6	.75
Collateral Activ. 4	228	Thesis Assembly, second half	1		.25
Collateral Activ. 5	228	Magazine Digest	2		.1
Collateral Activ. 6	228	A. S. M. E. & A. I. E. E.	1		
Collateral Activ. 3	227	Thesis, second half	28		7.0

DEPARTMENTS OF INSTRUCTION.

DRAWING.

Professor Nollau, Assistant Professor Horine, Assistant Professor Curtis, Miss McPherson.

1. **Mechanical Drawing.** Comprising: (a) Free-hand sketches, drawing from copies and models, using parts of machines in the laboratories as models. (b) Free-hand lettering. (c) Exercises in tinting and shad-

ing. (d) Tracing. (e) Blue-printing. Ten hours per week, first semester; five hours per week, second semester. (NOLLAU, HORINE)

2. **Free-Hand Drawing.** One hour per week, throughout the year. (MISS MCPHERSON)

3. **Descriptive Geometry.** This work includes first the discussion of descriptive geometry as a branch of pure mathematics, later comes a consideration of the application of descriptive geometry principles as an aid to engineering drawing. The lectures and recitations are supplemented by work in the drawing room during the latter part of the semester. Prerequisite, Mathematics 1. Five hours per week. Second semester. (NOLLAU, HORINE, CURTIS)

4. **Elementary Design.** (a) Drawing the parts of machines and complete machines to scale. (b) Design of machine details. Seven hours per week, first semester; six hours per week, second semester. (NOLLAU)

5. **Theory and Practice of Photography.** Lectures on the chemistry and optics of photography especially prepared with reference to the latest practice in photographic art. The student also has laboratory practice in photography which gives him a good practical working knowledge of picture taking and picture making with particular application to engineering subjects. Two hours per week. Second half of second semester. (NOLLAU)

ELECTRICAL ENGINEERING.

Professor Freeman, Instructor Duncan.

1. **Elements of Electrical Engineering.** This work covers a study of the fundamental laws of electrical engineering; the construction and principle of the simpler forms of measuring instruments, such as galvanometers, ammeters, voltmeters, and wattmeters; direct current circuits and transmission lines; and the fundamental theory of direct current generators and motors; Prerequisites, Physics 2b. The first semester of Mathematics 5 must have been completed or be taken coordinately. Five hours per week. First semester. (FREEMAN)

2. **Applications of Electricity.** This is a continuation of Course 1 and involves a more detailed study of the design and construction of direct current machines. Considerable time is also devoted to illumination, telegraphy and telephony and some attention is given to the rules of the National Board of Fire Underwriters. Prerequisite, Electrical Engineering 1. Five hours per week. Second semester. (FREEMAN)

3. **Alternating Currents.** This work involves a study of the fundamental principles of alternating currents and the principle and construction of alternating current generators, motors, transformers and converters. Five hours per week. First semester. (FREEMAN)

4. **Generation and Transmission of Power.** This involves a study of the design and operation of central stations and of the construction of transmission lines, Considerable time is devoted to a study of the theory and operation of the switching apparatus commonly used in modern central stations. Five hours per week. First half of second semester. (FREEMAN)

5. **Electrical Design.** The first part of this course involves design of an elementary character covering such apparatus as condensers and resistance coils. During the latter part, each student is given a problem in switchboard design which involves a study of parallel operation of generators and the arrangement of bus bars, control apparatus and feeder circuits. The work is for the most part done in the drawing room and is supplemented with lectures, whenever necessary, in order to give the student a clear idea of the methods of procedure which he should employ. Prerequisite, Electrical Engineering 1. Six hours per week. First half of second semester. (FREEMAN, DUNCAN)

6. **Dynamo Design.** This work involves all of the calculations necessary in the design of a direct current generator or motor. Each student is assigned an individual problem and follows the methods described by means of lectures and standard works on design. Prerequisite, Electrical Engineering 5. Ten hours per week. Second half of second semester. (FREEMAN, DUNCAN)

7. **Dynamo Design.** This is a continuation of Course 6. Each student makes a complete set of detailed drawings showing the construction of the particular machine which was assigned him at the beginning of Course 6. Four hours per week. First semester. (FREEMAN, DUNCAN)

8. **Transformer Design.** A complete set of calculations and detailed drawings are made of a common type of transformer. Each student is assigned an individual problem. Some standard text is used as a reference. Four hours per week. First half of second semester. (FREEMAN, DUNCAN)

9. **Electrical Laboratory. D. C.** The electrical experiments are designed to parallel as far as possible the work in Courses 1 and 2, the plan being to give the student practical illustrations of the theory covered in the class room. A comprehensive report of each experiment is

required by each student to be handed in within one week after the experiment is completed. Prerequisites, Physics 6b and Electrical Engineering 1. Electrical Engineering 2 must have been completed or must be taken co-ordinately. Two hours, alternate weeks first half, and two hours per week second half of second semester.

(FREEMAN, DUNCAN)

10. Electrical Laboratory. A. C. A series of experiments is provided which brings out the fundamental principles studied in the class room. The first experiments are of an elementary character, involving series and parallel combinations of resistances, inductances and capacities, and require the applications of complex quantity for the convenient analysis of the data obtained. Then the various features of the operation of generators, synchronous motors, transformers, induction motors, and the various forms of a. c. measuring apparatus are studied experimentally. A comprehensive report on each experiment is required of each student within a week after the experiment is performed. Two hours per week. First semester and first half of second semester.

(FREEMAN, DUNCAN)

11. Applications of Electricity for Mining Engineers. This covers a short study of the applications of electricity to mining, such as haulage, hoisting, pumping, lighting and telephoning. Presequisite, Electrical Engineering 1. Three hours per week, second half of second semester.

(DUNCAN)

12. Alternating Currents for Mining Engineers. This is a short course covering a study of the fundamental principles of alternating currents and of the more important types of alternating current machines. Prerequisites, Electrical Engineering 1 and 11. Five hours per week. First half of second semester. (DUNCAN)

HEAT ENGINEERING.

Dean Anderson, Assistant Professor Wilhoit, Assistant Professor Cassidy.

1. Thermodynamics. This work consists of a study of the laws of thermodynamics, thermal capacities, and the application of thermodynamics to the steam engine, steam turbine, and gas engine. Five hours per week. First semester. (ANDERSON, CASSIDY)

2. Valve Gears. The study of various forms of standard engine valves and methods of designing. Five hours per week. First half of first semester. (ANDERSON, WILHOIT)

3. **Steam Boilers.** A study of the various commercial steam boilers, consumption of fuel, incrustations, determining of horse power of boilers, boiler tests, the design of boilers for efficiency and economy, and the methods of heat transmission. Five hours per week. Second half of first semester. (ANDERSON, WILHOIT)

4. **Steam Engineering of Power Plants.** In this course the theory, design and operation of the steam appliances used in connection with the generation of power in steam central stations are studied together with the manner in which the apparatus is associated in a complete plant. Five hours per week. First half of second semester.
(ANDERSON, CASSIDY)

5. **Gas Engineering.** This comprises a study of the theory, design and operation of the various types of internal combustion engines. Five hours per week. First half of second semester.
(ANDERSON, WILHOIT)

6. **Valve Design.** In valve design the essentials of steam distribution are presented by the solution of a number of problems involving first the kinematics of valve motions and later the analysis of a valve gears on some of the prominent engines on the American market. Finally valve gears are designed to produce a certain steam distribution Six hours per week. First half of first semester.
(ANDERSON, CASSIDY)

7. **Boiler Design.** In boiler design the student is familiarized with the best steam boiler practice in horizontal and water tube designs. Six hours per week. Second half of first semester. (ANDERSON, CASSIDY)

8. **Steam Laboratory.** This laboratory course involves a study of the apparatus used by the steam engineer, and the experiments are intended to familiarize the student with the simpler methods of measuring heat units and determining mechanical power. Two hours, alternate weeks first half, and two hours per week second half of second semester.
(ANDERSON, WILHOIT)

9. **Steam and Gas Engine Laboratory.** A series of experiments with steam and gas apparatus and machinery, for the purpose of training men in the refinements of steam and gas engineering. Two hours per week. First semester, and first half of second semester.
(ANDERSON, WILHOIT)

MECHANICS OF ENGINEERING.

Professor Frankel, Assistant Professor Curtis, Assistant Professor Wilhoit, Assistant Professor Cassidy.

1. **Mechanics of Materials.** This course presents to the student the laws governing the behavior of the different materials used in construction under the action of forces. Beams, columns and shafts of different shapes and materials are analyzed with reference to their resistance and deformation when subjected to compressional, tensional and torsional strains. Problems including the design of truss members, floors, girders and reinforced concrete construction are given. Prerequisite, Physics 5. Mathematics 5 must have been completed or must be taken co-ordinately. Five hours per week. First semester. (FRANKEL)

2. **Testing of Materials.** In the testing of materials laboratory experiments are conducted to verify the laws governing materials under stress and to establish the principles of the mechanics of materials Experimental investigation of woods, irons, cements and bricks in their various forms are made with a view of impressing the students with the factors entering into the use of such materials in engineering construction. Prerequisite, Mechanics of Engineering 1 must have been completed or be taken co-ordinately. Two hours per week. First semester. (FRANKEL, CURTIS)

3. **Kinematics.** This course is intended to familiarize the student with the mutual dependence of the movements in the parts of a machine. Special attention is given to the analysis of mechanisms involving link-motions, gear teeth, cams, communication of motion by rolling and sliding contact and quick-return motions. Prerequisites, Mathematics 1, 2 and 3. Four hours per week. First semester. (FRANKEL, CURTIS)

4. **Kinematic Design.** This course is given in conjunction with Mechanics of Engineering 3. It consists of eight plates of design of spur, bevel and worm gearing, and other mechanisms which illustrate the general principles discussed in kinematic problems. Twelve hours per week. First semester. (FRANKEL, CURTIS)

5. **Slide Rule Practice.** This course is intended to familiarize the student with the theory and use of the slide rule. Prerequisite, Mathematics 2 and 3. One hour per week. First semester. (WILHOIT)

6. **Analytical Mechanics.** This subject is given with a view of encouraging original analysis, logical proofs and rational conclusions with respect to the treatment of the equilibrium and motion of bodies

under the action of force. The application of the fundamental principles of mechanics to engineering problems is treated in a way calculated to interest t' e student in the application of analytical mechanics in his engineering work. Prerequisites, Physics 5. Mathematics 5 must have been completed or the second semester must be taken co-ordinately. Five hours per week. Second semester. (FRANKEL)

7. **Machine Design.** A complete design of some modern machine tool is required of each student taking this work. This includes a written digest of the analysis of similar machines on the market and complete shop drawings of the special machine assigned to the individual student according to given specifications. This work is supplemented by a course of lectures to emphasize particularly the best practices in machine building as represented by the design of our modern machines. The cutting speeds and feeds of high speed tools, the design of variable speed boxes, design of bearings, the analysis of the stresses set up in the parts of machines and the calculations of the sizes of parts, are all discussed in the course of these lectures. Special machines that involve some of the more interesting problems of design are taken as a whole and analyzed in detail. Prerequisites, Mechanics of Engineering 1, 2, 3 and 4. Eight hours per week. Second semester. (FRANKEL, CURTIS)

8. **Heating and Ventilating.** This is a study of the calculations necessary for the design of a modern heating and ventilating installation. Details of the construction of the apparatus required and the best methods of erecting same are carefully considered. Furnace heating, steam heating and hot water heating are all included in the investigations and calculations are made for each system. The relative merits of each system under particular conditions are emphasized. Two hours per week. First half of second semester. (FRANKEL)

9. **Heating and Ventilating Design.** The class work in heating and ventilating is supplemented by work in the drawing room where for a given building, heating plants of three systems are designed, and working drawings made showing the location and size of apparatus. A bill of material and the estimated cost are also included in the requirements. Six hours per week. First half of second semester.

(FRANKEL, CASSIDY)

PRACTICAL MECHANICS.

Superintendent of Shops Joseph Dicker and Instructor J. B. Dicker.

1. Wood Working. This work includes: (a) Recitations on the forms of wood-working tools and the cutting and peculiarities of timber. (b) Lectures on the operation of the various forms of wood-working machinery. (c) Bench-work in wood, including exercises in the following operations: planing, sawing, rabbeting, plowing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenters' tools. (d) Wood-turning, involving the various principles of lathe-work in wood. Twelve hours per week. First semester. (J. B. DICKER)

2. Pattern Making. This is a continuation of the course in Wood-Working and is intended to give the student experience in the construction of patterns for use in making iron and brass castings. The work in the shop is supplemented by frequent lectures and recitations on the theory of pattern making. Courses 2 and 3 are co-ordinate and together occupy eight hours per week during the second semester. (J. B. DICKER)

3. Foundry Work. This includes the various operations of molding, core-making and the melting and casting of iron, brass and other commercial alloys. The practical work in the foundry is supplemented by lectures and recitations on the proper conrtruction and use of patterns, core making, cupola practice, making of alloys, the modern system of hand and machine molding and the processes involved in producing sound, suitable castings in a first-class foundry. Courses 2 and 3 are co-ordinate and together occupy eight hours per week during the second semester. (JOS. DICKER)

4. Forge Shop Work. Exercises in iron and steel forging. Pre requisites, Practical Mechanics 1 and 2. Courses 4 and 5 are co-ordinate and together occupy eight hours per week during the first half of the first semester, and ten hours per week during the remainder of the year. (JOS. DICKER)

5. Machine Shop Work. (a) Exercises in vice work in metal. (b) General machine work; including screw cutting, drilling, planing and the milling of iron, brass and steel. Prerequisites, Practical Mechanics 1 and 2. Courses 4 and 5 are co-ordinate and together occupy eight hours per week during the first half of the first semester and ten hours per week during the remainder of the year. (JOS. DICKER)

6. **Lectures on Shop Practice.** A presentation of the essentials of efficient machine shop practice. Two hours per week. First semester. (JOS. DICKER)

COLLATERAL ACTIVITIES.

1. **Junior Inspection Trip.** Five days during the third week of March are given up primarily to the study of important machine tool building and manufacturing plants in the vicinity of Cincinnati, Hamilton and Dayton, Ohio. A portion of the time is devoted to the analysis of power and electric lighting stations. The itinerary is carefully arranged to give to juniors an opportunity to see the best modern manufacturing practice and as Cincinnati is the acknowledged center of the machine building world the student is given an unusual opportunity to study the very latest development in the machine designer's art at a comparatively small cost and little loss of time from his regular collegiate work. (FRANKEL, FREEMAN, CURTIS)

2. **Senior Inspection Trip.** This trip includes visits to the most important mechanical and electrical engineering industries in Chicago and vicinity. The fourth week in March is devoted to the itinerary, and the following places are carefully studied from an engineering standpoint: Indiana Steel Company's plant, Gary, Ind. Water intakes of the Chicago Water Works, Chicago Avenue and Central Park pumping stations, Fisk street, Quarry street and Northwest generating stations of the Commonwealth Edison Company; power plant of the South Side Elevated Railway; plant of the Pullman Palace Car Company; packing plant of Armour & Company; Hawthorne plant of the Western Electric Company; power plant of the Metropolitan elevated; power plant of Blackstone Hotel; the main office of the Chicago Telephone Exchange; the central office and tunnels of the Automatic Telephone Exchange; and the Division Street plant of the Peoples Gas, Light and Coke Company. (ANDERSON, FREEMAN, CASSIDY)

3. **Thesis.** A part of the Senior class in Mechanical and Electrical Engineering is given the problem of making a complete set of plans and specifications for a modern central energy power plant. The conditions existing in a large consulting engineering office are duplicated as far as possible the idea being to give the men a clear insight into the operation of such an office as well as to thoroughly acquaint them with the details of making a set of plans and specifications for a large power generating station. If there are more than enough men in the class to

complete this problem in the allotted time, individual theses problems are assigned to some members of the class.

(ANDERSON, FRANKEL, FREEMAN, CASSIDAY, DUNCAN)

4. **Thesis Assembly.** The senior class is assembled for one hour each week for the purpose of discussing the work which each man is doing in connection with the preparation of his thesis. In this way each student is given the benefit of any interesting work that is being done individually by the other members of the class.

(ANDERSON, FRANKEL, FREEMAN, CASSIDY, DUNCAN)

5. **Magazine Digest.** This time is devoted to a review of the current engineering and scientific journals. One-half of the time is given to mechanical engineering and one-half to electrical engineering articles. Each student is assigned one magazine, or part of a magazine to review and discuss before the class at each meeting. Two hours per week. Throughout the year. (ANDERSON, FREEMAN, CASSIDY, DUNCAN)

6. **A. S. M. E. and A. I. E. E.** Each student in the senior class in the College of Mechanical and Electrical Engineering is enrolled as a student member of the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. They receive the transactions of these two Societies which are issued monthly. The material contained in these form the basis of papers and discussions which are prepared and presented by the students. Many lectures are given by prominent men under the auspices of these student branches. One hour per week. Throughout the year. (CASSIDY, DUNCAN)

7. **Class Societies.** Each class in the College of Mechanical and Electrical Engineering is organized into a society which holds meetings at least once a month at times to suit the regular schedule.

COLLEGE OF MINES AND METALLURGY.

CHARLES J. NORWOOD, DEAN.

GENERAL STATEMENT.

Organization.

The College of Mines and Metallurgy embraces the following schools:

School of Mining Engineering.
- Mining Engineering.
- Mining, two years course.
- Practical Miners Course.

School of Metallurgical Engineering.
- Metallurgical Engineering.
- Ore Dressing.

School of Extension.

Advantage of Location.

The State University is exceptionally well situated with reference to the practical study of both coal and metal mining (including lead, zinc and iron), and for the study of metallurgical practice in certain lines, there being within the State numerous coal and metal mines, and several iron and steel metallurgical establishments (including iron furnaces, puddling furnaces, Bessemer plants, sheet, rod, and wire nail mills, etc) at small cost. Practical work in concentrating lead ores may be studied at the Kissinger mine, and at the Nicholasville barytes plant, in near-by counties. Both places may be reached by a trolley line and a short drive. Elaborate lead and zinc concentrating plants may be studied in the western part of the State. Barytes and calcite (''whiting'') grinding plants and a blanc fixe plant are in operation within a few miles of Lexington. Coal washing and coking may be studied at Ashland, where a Robinson washer is used, and at Earlington, where a Campbell plant is in operation. At Ashland, too, in addition to Beehive ovens, a large newly constructed Semet-Solvay by-product coking plant may be studied. The copper mines of Tennessee, the iron mines of Virginia, Alabama and Tennessee, and the gold mining regions of Alabama and

Georgia, with their accompanying metallurgical plants, may be reached within twenty-four hours or less of travel.

The great coal region of Eastern Kentucky is being rapidly developed in a very large way. As this proceeds, Kentucky, now fifth, will within a few years become fourth among the coal producing States, only Pennsylvania, West Virginia and Illinois having precedence over it. By recent completion of the Lexington & Eastern Railway almost to Pound Gap, Lexington is brought into close touch with a large part of the field; and opportunity for the study of coal mining as conducted on the most progressive lines, and for the formation of connections with mining companies is faciliated.

Meetings of the Kentucky Mining Institute, a State-wide organization, are held at the College of Mines and Metallurgy. This brings the students into contact with mining men, metallurgists, and others interested in the development of the State.

EQUIPMENT.

The Buildings.

The College of Mines and Metallurgy occupies two brick buildings, standing in the form of a "T," separated by a passage 25 feet wide. The main building is 45 by 100 feet, two stories high with a basement 11 feet high. The lower floor is devoted to the State Geological Museum and the offices of the State Department of Mines. On the upper floor are class rooms, drawing room, library and reading room, and offices for instructors. The basement, which has floor concreted and walls cemented, is divided into large rooms, and is used for the larger exhibits of the Geological Museum, and for the preservation of maps and records of the Inspector of Mines.

The second building (Mining Laboratary) is 40 feet by 80 feet and two stories high. It is devoted to laboratory work in Ore Dressing, Mine Air, Metallurgy and Assaying. It also contains examples of mining machinery and the clay testing outfit of the State Geological Survey.

Apparatus and Laboratories.

For lecture-room illustrations and demonstrations the equipment includes two excellent electric light stereopticons and a reflectoscope, with a large number of special slides; many charts, photographs and blueprints, illustrating mining methods, mining machinery, and metallurgical operations; large Keuffel & Essar working models of verniers and slide rules; a working model of a shaft hoist with safety catches; examples of

mining tools; three handsome cases showing various sorts of "DuPont" explosives; wire rope and electric wire boards; Koerting and Buffalo Forge Company mine-spraying devices; safety lamps of various types (including electric); apparatus for instruction in methods of detecting mine gases and testing safety lamps; apparatus for studying coal dust explosions; types of acetylene mine lamps; a very complete working model of a Cameron mine pump; types of mine telephones; a pneumatic mine signal; diamond core-drill bits; a small Sirocco mine fan; and instruments for measuring ventilation. A number of large photographs, framed, showing coal mining operations, have been presented to the College by Prof. R. D. Quickel, fuel agent for the Cincinnati Southern Railroad.

The Metallurgical Laboratory is provided with several gasoline assay furnaces; a plant of gas assay furnaces; two coke or (or charcoal) assay furnaces; two laboratory electric furnaces; crushing, grinding and sampling apparatus; apparatus for "barrel" chlorination; an Abbe double Trojan ball mill; apparatus for studying the cyanide and amalgamation processes; furnaces for the study of smelting processes and of the heat treatment of iron and steel; apparatus for the study of wet processes for the extraction of non-ferrous metals; of pyrometry; and of metallography. Calorimeters for the study of fuels; and a special furnace for testing clays are also at the command of the College.

It is intended that the mining laboratory shall not only serve the purpose of instruction, but that it shall prove helpful, as a testing laboratory, to those engaged in the coal, lead, zinc, and spar districts of the State. The present equipment includes, among other things, a standard, full-sized Wilfley concentrating table; an Allis-Chalmers Company three-stamp mill; a Hallet hand jig; a Jarvis jig; a Vezin jig; a Munroe laboratory slime table; a Munroe laboratory classifier; apparatus for instruction in flotation processes of ore separation; a Dings electro-magnetic separator; a Blake-Morscher electro-static separator; various types of mine car wheels; a Wood rock-drill; a Hardscog hammer drill; a Nixon rachet coal drill; a Harrison coal-cutting machine, for use in demonstrating the use of compressed air in mining operations; several sets of steel mine timbers (Carnegie Steel Co.) including lining sufficient to illustrate an entry protected according to advanced methods; a Dayton automatic mine door complete; a 6-ton mine locomotive, placed on deposit by the General Electric Company, which is used in the study of the construction of such electric motors; a Campbell coal-washer; a complete model of the St. Bernard Mining Company's coal washery; and a

complete ventilating fan and fan house. The fan has been so installed that various problems relating to mine ventilation may readily be studied.

Mine Rescue Apparatus and First Aid.

The College owns a Fluess "Proto" apparatus. In addition, two sets of Draeger apparatus, provided for the State Mine Inspectors, have been placed in one of the basement rooms of the main building. The latter sets include four oxygen hemlets and accessories complete, charging pumps, a mouth-breathing apparatus, electric lamps and charging devices, a water gauge, and a pulmotor for administering oxygen in cases of suffocation and gas-poisoning. The room has been fitted up so that training may be given in mine rescue work. Instruction in the use of the apparatus is given to mining students and to visiting miners from time to time.

Instruction in methods of first aid to the injured (given by Dr. Pryor, Professor of Anatomy and Physiology), was introduced during the session of 1912-13.

DEGREES.

The degree of Bachelor of Mining Engineering (B. E. M.) or of Bachelor of Metallurgical Engineering (B. Met. E.), as the case may be, is given upon completion of the regular appropriate course of four years.

For the degree of Mining Engineer (E. M.), Ore Dressing, Milling, Coal Mining, Metal Mining, Mine Plant, Metallurgy, or Electricity Applied to Mining, may be selected as major study; and minor studies may be assigned from Metallurgy, Civil Engineering, Mechanical Engineering, Electrical Engineering, Geology, Chemistry, Physics, Mathematics, Political Economy, Law, Sociology, English, Spanish, German.

For the degree of Metallurgical Engineer (Met. E.), Metallurgical Mill Construction, Ore Dressing, Milling, Fuel Testing and Purchasing, Heat Treatment of Steel (practical study), Electrometallurgy, Alloys, Advanced Metallurgy (including steel and other metals), or some other approved problem in Metallurgy, may be selected as major study; and minor studies may be assigned from Mining Engineering, Mechanical Engineering, Electrical Engineering, Civil Engineering, Chemistry, Physics, Mathematics, Pyrometry, Clay Burning, Electrolytic Refining, Economics, Sociology, Law, English, Spanish and German.

A non-resident student may obtain the advanced degree, three years after graduation, if he has engaged in practical engineering work during that time, and presents an acceptable thesis.

Candidates for advanced degrees should apply to the Dean of the Graduate School.

COURSES OF INSTRUCTION.

The courses are laid out with the design of affording the student a thoroughly good foundation for professional work, and of so preparing him that he may readily and quickly assimilate that knowledge of the details of practice which may be gained only through experience. In order that he may have the benefit of a certain amount of practical experience before graducation, the student is expected to spend his Junior (and if possible his Sophomore) vacation at some mine or metallurgical establishment, or in some employment appropriate to his chosen line of work. The College of Mines and Metallurgy has been successful in placing its undergraduates during vacation months, and all graduates have obtained positions promptly after graduation.

Schedules showing in detail the order in which the subjects leading to degrees in the respective Schools of the College, together with the amount of time devoted to each, are given on succeeding pages.

Following are general notes descriptive of technical subjects included in the Courses:

CHEMISTRY.

Chemistry is begun in the Sophomore year. The course in general inorganic chemistry consists of lectures and recitations three hours each week throughout the year, with laboratory exercises four hours per week in the first semester, and six hours per week in the first half of the second semester. Qualitative analysis of metals is given six hours per week during the second half of the second semester of the Sophomore year. Quantitative analysis is given three times each week during the first half of the second semester of the Junior year. The work indicated is taken by students both in Mining and in Metallurgy. The student in Metallurgy takes additional quantitative analysis, including analysis of alloys, slags, refractory materials, flue and producer gases, rocks, iron and steel.

PHYSICS.

Instruction in General Physics (text, lectures, and laboratory) is given in the Freshman year. Advanced Physics, including mechanics,

sound, heat, magnetism, and electricity, is taken up in the Sophomore year, and is given throughout the year. The work indicated is taken by students both in Mining and in Metallurgy. The student in Metallurgy may take advanced physical measurements in addition.

APPLIED ELECTRICITY.

Includes Elements of Electrical Engineering, Dynamo-Electric Machinery, Electrical Appliances, Alternating Current Machines and Power Plants. Among the subjects covered are, the fundamental laws of electrical engineering; measuring instruments; condensers and the measurement of capacity; inductance and its measurement; direct current and transmission lines; direct current generators and motors; electric lighting and wiring and telephones; electric mine haulage, hoisting and pumping machinery; alternating current generators and motors; care of electric motors; high voltage transmission lines; the equipment and operation of central stations for the generation of electric energy. Taken by students both in Mining and in Metallurgy.

MECHANICS AND HYDRAULICS.

Mechanics of Materials of Engineering, which deals with the laws governing the behavior of the different materials used in construction under the action of forces, is required of all students pursuing four-year courses in this College. The effect of strains upon beams, columns and shafts of different shapes and materials is studied. Problems including the design of truss members, floors, girders, and re-enforced concrete construction are given. In addition to the class-room instruction, experimental work is carried on in the testing laboratory. Analytical Mechanics is taking only by the students in Mining. Hydraulics is required of all students pursuing the full course in Mining and Metallurgy. The instruction includes the solution of problems covering the principles of hydrostatics and hydrodynamic pressure, the flow of water through orifices and nozzles, over wiers and through pipes and open channels, and losses from friction and other sources.

DRAWING AND DESIGN.

A liberal amount of instruction in Drawing and Design is given. The course includes mechanical and free-hand drawing, embracing sketches from copies and models, lettering (mechanical and free-hand), tinting and shading, tracing, and blue-printing; Descriptive Geometry and its

application to engineering drawing; the design of machine details, the design of mine and metallurgical structures, and the construction of mine, land, and geological maps. Graphic Statics is given in the Junior year and advanced work in structural design in the first semester of the Senior year.

WOOD AND FORGE SHOPS AND FOUNDRY.

Instruction in wood-working (bench and lathe) is taken in the Freshman year, and instruction in blacksmithing—exercises in iron and stee forging and in vise work—is taken in the Sophomore year. Students in Metallurgy take instruction in foundry practice, including molding and core-making, and the melting and casting of iron, brass, and other commercial alloys.

GEOLOGY, MINERALOGY, AND ORE DEPOSITS.

Taken by all students matriculated in the College of Mines and Metallurgy. For those taking mining engineering who may elect to specialize in mining geology (now followed by many mining engineers), a systematic course is laid out which, in addition to an adequate amount of instruction in geology, petrology, and mineralogy, includes the necessary thorough training in the technical features of mining and the study of ore deposits from the mining point of view; also, necessary instruction in the survey and estimation of mineral deposits generally, in scientific methods of prospecting (including field methods in the survey of underground structure), in the application of descriptive geometry to engineering problems involved in geological conditions affecting mineral deposits, in the examination and valuation of mines and mining properties and reporting thereon, in assaying, in ore dressing, in chemical analysis, in metallurgy, and in drawing. Some instruction in the application of metallographic methods in the study of ores is also given. The work is carried through the Junior and Senior years.

In addition to the excellent geological and mineralogical collections of the Department of Geology (College of Arts and Science), the State Geological Museum, exhibiting representatives of all the mineral products of Kentucky, together with collections from other States, which occupies one floor of the Mining Engineering building, is conveniently arranged for study by students of the College.

MINING.

The instruction in the special theme of Mining (including both coal and metal) is laid out along a continuous line, each subject being introductory to that which follows, and is given by lectures supplemented by text-books and assigned reading. A general outline of the subjects discussed under the special head of Mining is as follows:

1. **Elements of Mining.** Freshman. A general view of mining operations, preparatory for the advanced work. Two hours per week. Throughout the year. (TASHOF)

2. **Excavating Quarrying.** Junior. (a) Excavation in soft ground and in rock. (b) Explosives and blasting: Kinds and effects of explosives; theory and practice of blasting; placing, charging, and firing holes under various conditions; substitutes for explosives, (c) Quarrying: Plants and methods for various sorts of rock; underground quarries. First semester. (BARR)

2a. **Boring, Shaft-Sinking, Shaft-Boring.** Junior. (a) Boring methods with auger, with rods, and with rope; rotary boring; casing; drive piping. (b) Shaft-sinking: General principles. Methods in soft ground and in rock. Hoisting, ventilating, and draining during sinking. Timbering, walling, tubbing, and linings for special cases. Sinking linings in watery ground and in quicksand. (c) Shaft-boring: General observations. Various methods described and compared. Courses 2 and 2a total five hours per week. First semester. (BARR)

3. **Development, Method of Working.** Junior. (a) Exploration and Development. Choice of exploratory methods—shafts, adit, slope, Location of openings with reference to development. Laying out the workings, and order of exploration. Driving tunnels, drifts, gangways, slopes, levels, cross-cuts. Upraises—vertical and inclined. Winzes—methods of sinking and raising. (b) Methods of Working and of Supporting Excavation: General rules as to choice of mode of working away, etc. Breaking ground (1) in coal mining and (2) in metal mining. Support of excavations, (1) by pillars of mineral, (2) by timbering, (3) by caving and filling. Methods of working applicable to deposits according to their origin, thickness, inclination, and character. Five hours per week. Second semester, first half. (BARR)

4. **Ore Deposits, Prospecting and Metal Mining.** Senior. (a) Mining Geology. Origin of Ores. Classification of ore deposits. Irregularties and disturbances of beds and veins. (b) Prospecting: Systematic methods. Value of Geology. Tracing outcrops. Construction of sec-

tions. Application of Descriptive Geometry to the solution of mining geology problems. (c) Open cuts and stream workings. Hydraulic mining. Dredging. (d) Metal Mining. Five hours per week. First semester. (NORWOOD AND ASSISTANT)

5. **Extraction.** Junior. Extraction and removal of material: Mine and surface haulage roads; rope and other means of haulage. Hoisting. Drainage. Five hours per week. Second semester, second half. (BARR)

5a. **Ventilation.** Senior. Theoretical considerations; methods of ventilation; distribution of air supply. Three hours per week. First semester. (BARR)

6. **Gases and Accidents.** Senior. (a) Mine Gases and Illumination. (b) Accidents: Causes; places; explosions; safeguards; rescue and relief. Five hours per week. Second semester, first half. NORWOOD)

7. **Mine Plant.** Senior. Machinery and appliances for mining, hoisting, draining, ventilating, hauling, screening, loading, storing, etc. Three hours per week, First semester. Five hours per week, second semester, first half. (BARR)

8. **Metal Mining Continued and Examination and Valuation of Mines, Etc.** Senior. Methods and precautions in examination and valuation. "Salting," concealing exhausted workings, etc. Relation of capital invested to actual dividends. Mine management. Cost sheets. Three hours per week. Second semester, last half. (NORWOOD)

9. **Mining Laws, Mine Rules and Mining Camps.** Senior. Two hours per week. First semester. (BARR)

10. **Mine Air. Sampling and Examination.** Senior. Two hours per week. Second semester, first half. (REED)

Mine Visitation. Opportunity for visiting mines under the guidance of the Dean, or of an Assistant Inspector of Mines, will be given at the close of the term.

MINE AND LAND SURVEYING.

In Mine and Land Surveying, which comes in the Sophomore and Junior years, the application of the art of surveying to the work of mining engineering is emphasized. Following the preliminary instruction and the solution of general problems, the practical applications are taken up, including running outcrop; determining the proper locations of mine opening and tipple; locating buildings, bodies of water and streams

with relation to underground workings; bringing branch lines in from main track; carrying meridian into mine; plumbing shafts, surveying entries and rooms, grading mine entry for track, setting out curves, changing distances between room necks with variations of the entry, driving both ways, locating bore-holes for pipes, etc., solving drainage problems, surveying stopes with German dial (string survey) and with transit, construction of mine maps and sections, etc. Opportunity for practice in underground surveying is afforded at the coal mines and at the vein mines (lead, zinc and spar), within short distance from Lexington. The mine maps filed by the various mining companies with the State Department of Mines are at the service of the student for study and comparison. Instruction is also given in the elements of topographic surveying, including practice in the use of the plane table.

MINE PLANT: MINING MACHINERY.

The various elements of Mine Plant are dealt with by grouping them, as well as may be, under three heads, namely, (a) motors, (b) machines and devices connected chiefly with underground operations, and (c) that part of the plant which is chiefly on the surface; as follows:

1. Motors: Steam engines and boilers, and valve gears; gasoline engines and motors; electric engines and locomotives. Compressed Air: Air compression, compressors, receivers, transmission through pipes, locomotives.

2. Underground Chiefly: Drills (air, steam, electric, hand). Coal cutters (air and electric). Drainage: Siphons, boxes, cars, pumps (steam, electric, gasoline, hydraulic, spear). Permanent and sinking pumps. Setting of pumps. Rams, air lifts, compressed air pumps. Pipes, pipe connections, laying pipe lines, supporting pipes in shafts. Mine Cars: Wood and steel, coal and ore; design of a car, with specifications, Ventilation: Fans of various types; detailed study of working model of a fan; construction of overcasts and regulators. Electrical installation: Wiring the mine; dangers and safeguards; mining laws relating to electrical installation.

3. Surface Chiefly: Headframes and gears, tripods, whips, whims, windlasses, cages for slopes and shafts, safety devices, skips. Wire Rope: Types, selection, uncoiling, storing, capping, testing. Tipples: Wood, steel, and cement structures, cross-overs, retarders, weigh-baskets, loading bins, track-scales, testing of scales, car loaders. Sizing and Cleaning: Bar grizzlies, punched screens, trommels, shaking screens, rotary grizzlies, gyratory screens, picking tables and belts, elevators.

Transportation: Conveyors, car hauls, aerial ropeways. Inclined Planes: Gravity and engine planes, and equipment for each.

ORE DRESSING.

1. **First Course.** Junior year. Three hours per week. Second semester, second half.

2. **Second Course.** Senior year. First semester: First half, recitations four hours and laboratory four hours per week. Second half, laboratory eight hours per week.

Kentucky lead and zinc ores, complexes of fluorspar, calcspar, and barytes, and iron ores are readily available for the laborotory. In addition to the usual wet methods of concentration, magnetic, electrostatic, and flotation processes of separation are studied. These courses also include coal washing.

METALLURGY.

The study of Metallurgy is begun by students in Mining and in Metallurgy in the Sophomore year. The work is apportioned as follows:

1. **Assaying.** Junior. The fire-assay of gold and silver ores, and of lead and copper ores for base metals. For students in Mining. Labatory ten hours per week. Second semester, last half. (TASHOF)

1a. **Assaying and Laboratory Ore Tests.** The fire-assay of gold and silver ores; galena and coinage for silver; bullion—base, Dore, silver and gold; copper-bearing material (ores, mattes, blister copper, etc), for silver and gold; copper and lead slags; zinciferous ores and metallurgical products (e. g., residues from zinc distillation, and cyanide zinc precipitates) for silver and gold; copper, lead, and tin ores for base metal. Also, the assay of mercury, as an exercise in distillation, and the electrolytic assay of copper and lead ores. The determination of the heating power of coal by reduction of litharge is also given, as a speedy, though not accurate, method useful in emergencies. Exercises in the determination of the suitability of certain wet extraction processes for a given ore include: (1) Tests of ores for cyaniding; (2) tests of gold ores for chlorinating; and regulation tests for chloridized-roasting of silver ores. For students in Metallurgy. Senior year. Laboratory eight hours per week. Second semester, first half. (TASHOF)

2. **Elements of Metallurgy.** Sophomore. This includes a general review of typical metallurgical processes. For students in Mining and in Metallurgy. Two hours per week. Second semester, last half. (TASHOF)

3. **Metallurgy of Iron and Steel.** Juniors. For students in Mining. Two hours per week. First semester. (NORWOOD OR ASSISTANT)

4. **Metallurgy of Iron and Steel.** Junior. Metallurgy 3, extended. For students in Metallurgy. Five hours per week. Second semester, last half. (NORWOOD)

5. **Metallurgy of Copper, Lead and Zinc.** Junior. For students in Mining. (NORWOOD, TASHOF)

6. **Metallurgy of Silver, Gold, and Minor Metals.** Junior year. For students in Mining. Courses 5 and 6 total five hours per week. Second semester, first half. (NORWOOD, TASHOF)

7. **Elements of Metallography.** Senior. An introduction to the subject for students in Mining. Three hours per week. Second semester, first half. (NORWOOD)

8. **Metallurgy of Copper, Specialized.** For students in Metallurgy. Three hours per week. First semester. (NORWOOD, TASHOF)

9. **Metallurgy of Lead Specialized.** For students in Metallurgy. Second semester, first half. (NORWOOD OR ASSISTANT)

10. **Metallurgy of Silver, Gold, Zinc, and Minor Metals.** For students in Metallurgy. Courses 9 and 10 total five hours per week. Second semester, first half. (NORWOOD, TASHOF)

11. **Metallurgy of Alloys. Metallography.** Metallurgy 7 extended. Includes the preparation of samples of iron and steel, and descriptions of their structures, and studies of some of the alloys. For students in Metallurgy. Lectures, 6 hours per week for three weeks; laboratory eight hours per week for three weeks. Second semester. (NORWOOD)

12. **Fuel Testing. Pyrometry.** For students in Metallurgy. Laboratory six hours per week for six weeks. Second semester. (TASHOF)

13. **Metallurgical Calculations.** For students in Metallurgy. Three hours per week. Second semester, first half. (NORWOOD OR ASSISTANT)

14. **Metallurgy of Iron and Steel.** For students in Mechanical Engineering. Two hours per week. Second semester, last half. (NORWOOD)

15. **Metallurgy of Iron and Steel.** Preceded by a general review of of metallurgical processes. For students in Civil Engineering. Three hours per week. Second semester, last half. (NORWOOD)

16. **Metallurgy.** A general account of Metallurgical processes for students in industrial Chemistry. Two hours per week. Second semester. (NORWOOD OR ASSISTANT)

17. **Electro-Metallurgy.** For students in Metallurgy. Three hours per week. Second semester, first half. (NORWOOD)

MINING LAW, MINE RULES, MINING CAMPS.

The mining laws of Kentucky, together with those of some other States (both coal and metal) are studied; "mine rules" are discussed, a critical examination being made of rules now in operation at various mines; and a series of lectures is given on the founding and management of mining camps, including sanitation and sociological questions that are of especial moment to the life of a mining community. Senior year. First semester. Two hours per week.

MAGAZINE REVIEW.

In the Senior year semi-weekly conferences are held, under the guidance of an instructor. Articles on previously listed subjects that have appeared in technical journals, society transactions, and similar publications are reviewed. In this way the student is brought into close touch with the literature of mining, mining geology, and metallurgy, and with current progress in the applications of theory to practical propositions, and the reading habit is formed.

School of Mining Engineering.

MINING ENGINEERING.

OUTLINE OF COURSE LEADING TO THE DEEREE OF B. E. M.

FRESHMAN YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
English 1	105	English Composition	2		1.5
Mining 1	236	Elements of Mining	2		1.0
Mathematics 2	123	Trigonometry	5		2.5
Physics 1	129	General Physics	2		1.0
Physics 2	130	Physical Measurements		4	1.0
Drawing	234	Mechanical and Freehand		8	2 0
Shop Work	235	Bench and Lathe Work in Wood		8	2.0
Military Science		Drill		3	.75

*A credit represents one recitation, or two hours laboratory per week, for thirty-six weeks.

SECOND SEMESTER.

English 1	105	English Composition	3		1.5
Mining 1	226	Elements of Mining	2		1.0
Mathematics 3	123	College Algebra	5		2.5
Physics 1	129	General Physics	3		1.5
Physics 2	130	Physical Measurements		4	1.0
Drawing	234	Mechanical and Freehand		10	2.5
Drawing 3	220	Descriptive Geometry	5		2.5
Military Science		Drill		3	.75

SOPHOMORE YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Mathematics 4	123	Analytical Geometry	5	5	2.5
Physics 5a	130	Mechanics, Sound, Heat	3	3	1.5
Mine & Land Sur.	237	Recitation; Use of Instruments	2	2	1.0
Drawing 4	220	Elementary Design		7	1.75
Chemistry 1	97	General Inorganic Chemistry	3	4	2.5
Elective					
Military Science		Drill		3	.75

SECOND SEMESTER.

Mathematics 4	123	Analytical Geometry	5		2.5
Physics 5	130	Electricity, Magnetism, Light	3		1.5
Mine & Land Sur.	237	Recitations; Use of Instruments	2		1.0
Mine & Land Sur.	237	Field Work		8	1.0
Mathematics 5	123	Calculus	5		2.5
Chemistry 1	97	General Inorganic Chemistry	3		1.5
Chemistry 1	97	Laboratory. First half.		6	.75
Chemistry 2	97	Chemistry of Metals. Last half	3	6	1.5
Metallurgy 2	239	Elements of Metallurgy. Last half	2		.5
Shop Work 4	235	Iron and Steel Forging. First half		6	.75
Military Science		Drill		3	.75

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Elec. Engin. 1	220	Elements of Electrical Engineering	5		2.5
Mech. of Engin. 1	224	Mechanics of Materials of Engineering	5		2.5
Mech. of Engin. 2	224	Testing of Materials		2	.5
Mathematics 5	123	Calculus Completed	5		2.5
Mining 2, 2a	236	Excavating, Quarrying, Boring, etc.	5		2.5
Metallurgy 3	240	Iron and Steel	2		1.0
Mine Surveying	237	Field Work and Maps		8	2.0

Second Semester.

Mining 3	236	Development; Methods. First half	5		1.25
Mech. of Engin. 6	224	Analytical Mechanics	5		2.5
Metallurgy 5	240	Copper, Lead, Zinc. First half	5		1.25
Metallurgy 6	240	Silver, Gold, etc. First half			
Chemistry 10	98	Quantitative Analysis. First half	1	8	1.25
Geology 6	111	Economic Geology	2		1.0
Mining 5	237	Extrac. and Removal of Mat. Last half	5		1.25
Geology 3	111	Mineralogy		4	1.0
Ore Dressing 1	239	Concen. and Coal Washing. Last half	3		.75
Elec. Engin. 2	220	Applied Electricity. Last half	3		.75
Metallurgy 1	239	Assaying. Last half		10	1.25
Graph. Stat.	235	Graphic Statics. Last half	2		.50

SENIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
App. Mech. and Hydraulics 5	234	Hydraulics	2		1.0
Mining 7	237	Engines, Boilers, Mining Machines, etc.	3		1.5
Political Science 1	115	American Government	3		1.5
Political Econ. 1	114	Introduction to Economics	2		1.0
Mining 5a	237	Ventilation; Principles, etc.	3		1.5
Mining 9	237	Mining Law, etc.	2		1.0
Mining 4	236	Ore Deposits, Mining Geol., etc.	5		2.5
Ore Dressing 2	239	Applications and Laboratory		8	2.0
Plant Design	234	Structural Drawing		6	1.5

SECOND SEMESTER.

Elec. Engin. 11	222	Alternat. Cur. Machines, etc. First half	5		1.25
Political Science 1	115	American Government. First half	3		.75
Political Econ. 1	114	Introduction to Economics. First half	2		.50
Mining 7	237	Mine Plant. First half	5		1.25
Mining 6	237	Gases and Accidents. First half	5		1.25
Metallurgy 7	240	Elements of Metallography. First half	3		.75
First Aid	232	First Aid to Injured. First half	3		.75
Mining 10	237	Mine Air; Samp. and Exam. First half		2	.25
Mine Plant Design	234	Design of Mine Structures. First half		4	.50
Mining 8	237	Exam. and Val. of Mines. Last half	5		1.25
Magazine Review	241	Magazine Review. First half	2		.50
Thesis		Thesis. Last half semester			
Mine Visitation	237	Mine Visitation			

*A credit represents one hour of recitation, or two hours of laboratory per week, for thirty-six weeks.

THE TWO YEARS COURSE IN MINING.

A Two Years Course for young men who for any reason may not be prepared to take the full Engineer's Course of four years, but who desire to obtain more than an elementary training in the methods of mining. It is intended especially for persons who desire to fit themselves for such positions as Mine Manager, Mine Superintendent, Assistant Engineer, and Mine Inspector; also for those to whom a knowledge of mining will be of service in business or professional dealings even though they should not be directly connected with mining operations. Requirements for entrance are less exacting than those for the full course, just as the range of instruction is less comprehensive. No degree is conferred, but a certificate of proficiency is given. The course is quite flexible, to suit the preparedness of the student, and advanced work may be taken in lieu of such subjects in the specified list as the student may have completed satisfactorily elsewhere.

A Special Circular relating to the Course will be sent upon application to the Dean of the College of Mines and Metallurgy, State University, Lexington, Ky. This Course affords a great opportunity to many young men to acquire a technical training who might otherwise be prevented from attending college.

PRACTICAL MINERS COURSE.

A short Course for practical miners, mine foremen, and mine managers who desire to improve their knowledge of the principles that underlie correct mining. This Course, which covers eight weeks, is given

in the spring. Details concerning the Course are set forth in a Special Circular, which may be obtained upon application to the Dean of this College. Persons desiring to take the examinations for Mine Foreman and for Assistant Inspectors of Mines will find the Course quite helpful.

School of Metallurgical Engineering.

One course is given, which extends through four years and leads to the degree of Bachelor of Metallurgical Engineering. In addition to a certain amount of instruction in mining methods, the technical subjects are: (a) Metallurgy, (b) Ore Dressing (ore separation and concentration), (c) Coal Washing, Coke Making, and Fuel Testing; and (d) Assaying.

OUTLINE OF COURSE LEADING TO THE DEGREE OF B. MET. E.

FRESHMAN AND SOPHOMORE YEARS.

The work in the Freshman and Sophomore years parallels that given in Mining for the same years, except that, after the session of 1914-15, Pattern Making and Foundry work may be taken in lieu of some of the Freshman drawing, and a readjustment made in the position of Freshman laboratory work in Physics.

JUNIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Electrical Eng. 1	220	Elements of Electrical Engineering	5		2.5
Mech. of Eng. 1	224	Strength of Materials	5		2.5
Meth. of Eng. 2	224	Testing of Materials		2	.5
Mathematics 5	123	Calculus Completed	5		2.5
Mining 2 and 2a	236	Excavating, Quarrying, Boring, etc.	5		2.5
Surveying	237	Field Work and Maps		8	2.0

SECOND SEMESTER.

Mining 3	236	Development, Methods. First half	5		1.25
Metallurgy 13	240	Metallurgical Calculations. First half	3		.75
Metallurgy 5 and 6	240	Copper, Lead, Zinc, etc. First half	5		1.25
Chemistry 10	98	Quantitative Analysis	1	8	2.5
Geology 6	111	Economic Geology	2		1.5
Geology 3	111	Mineralogy		4	1.0
Mining 5	240	Extrac. and Removal of Mat. Last half	5		1.25
Metallurgy 4	240	Iron and Steel. Last half	5		1.25
Ore Dressing 1	239	Principles and Applications. Last half	3		.75
Electrical Eng. 2	234	Applications of Electricity. Last half	3		.75
Graph. Stat.	234	Graphic Statics. Last half	2		.50

*A credit represents one recitation, or two hours laboratory per week, for thirty-six weeks.

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Applied Mech. and Hydraulics 5	234	Hydraulics	2		1.0
Political Science 1	115	American Government	3		1.5
Political Econ. 1	114	Introduction to Economics	2		1.0
Metallurgy 8	240	Metallurgy of Copper Extended	3		1.5
Engines	238	Steam and Other Engines	2		1.0
Mining 4	236	Ore Deposits, Mining, Geol., etc.	5		2.5
Ore Dressing 2	239	Applications and Laboratory	2	6	2.5

SECOND SEMESTER.

Elec. Engin. 11		Altern. Current Mach., etc. First half	5		1.25
Political Science 1	115	American Government. First half	3		.75
Political Econ. 1	114	Introduction to Economics. First half	2		.50
Metallurgy 17	241	Electrometallurgy. First half	3		.75
Metallurgy 9 and 10	240	Lead, Silver, Gold. First half	5		1.25
Chemistry 17	99	Gas Analysis. First half		2	.25
Plant Design	234	Plant Design. First half		4	.50
Metallurgy 1a	239	Assaying and Testing. First half		8	1.00
Metallurgy 11	240	Alloys, Metallography. Last half	4	6	1.75
Metallurgy 12	240	Fuel Testing, etc. Last half		4	.5
Magazine Review	241	Magazine Review. Last half	1		.25
Thesis		Thesis. Last half semester			

School of Extension.

The purpose of the School of Extension is in part to extend the instructional work of the College of Mines and Metallurgy through the formation and supervision of local classes in the mining fields for men and youths employed at the mines, and through free lectures at mining centers and other appropriate places; also to disseminate information concerning the utilization of such of the mineral deposits of the State as require extended investigation in the laboratory for a full determination of their commercial applications.

For classes formed in the mining regions a Program of Studies is prepared by instructors in the College, examinations are held by representatives of the College, and a Certificate is awarded to such persons as satisfactorily complete the work laid out for them.

COLLEGE OF LAW.

W. T. LAFFERTY, DEAN.

SPECIAL STATEMENT.

The Legislature of the State of Kentucky in 1908, by special enactment, converted Kentucky State College into a University, which then assumed its place at the head of the educational system of the State, as State University of Kentucky. It was the design of the Legislature to make a strong state educational institution, and additional appropriations were made for that purpose. Additional courses of instruction were provided for at that time, one of which was a course in law. Accordingly the Board of Trustees directed that the College of Law be established as one of the integral parts of the University, and that it be opened September, 1908, for the admission of students.

After the experience of the first year, the course of study was so amended as to meet the requirements of the Association of American Law Schools; application for admission to membership in that association was made, and the following year was granted. Other improvements are constantly being made in order to keep pace with the most approved law schools of the country.

The requirements for a successful career in all lines of business and in all professions, necessitate the laying of a broader foundation before encountering these greatly changed conditions. The design of this College is to teach the student the fundamental principles of English and American Law, and to so extend the course of study as to fit him for the bar in any State. The course offered is thorough and comprehensive, giving such training as will prepare him for usefulness as a citizen, and success as a practitioner. The instruction will not be limited to persons who may choose the law as a profession, but will be given also to special students who may elect to take a limited course in such subjects as will be found useful in the pursuit of some other business or occupation. A good knowledge of the law is now being generally recognized as necessary and fundamental in making up a well-rounded preparation for a business life. Besides this, the study of the law, as now

taught, with its collateral work, is an important part of a liberal education.

EXPENSES.

Tuition is free to all Law students who are residents of Kentucky, but each student will be required to pay an incidental fee of $15 which will be used in paying for material consumed, and in payment of a ticket which will entitle the holder to free admission to all public lectures given under the auspices of the Public Lecture Bureau, to medical advice from the resident physician, to the use of the University hospital, and free admission to all atheletic contests and exercises given under the auspices of the University Athletic Association. Non-resident Law students will pay an additional fee of $5. Students entering the second semester will pay one-half the above fees. Each graduate will pay a diploma fee of $5. The books for the required work will cost about $25 per year. Good board and lodging can be had in private families at prices varying from $3.50 to $4.50 per week. Or rooms may be had in private families and meals obtained at the University dining hall at very reasonable rates.

ADMISSION.

Applicants for admission to the first year classes of the College of Law must be at least eighteen years of age. Each of such applicants. if required must present evidence of good character. This may in the form of a certificate of credit from the school last attended by the applicant, or by a letter signed by a reputable citizen. Students who carry their full line of work in other Colleges of the University may, during their Senior year and by the consent of their Dean, have the privilege of attending, free of charge, any of the lectures and recitations of the College of Law. No law studeut will be required to drill or do any kind of military duty.

Entrance Requirements.

All students who are candidates for graduation must be able to offer credit for fifteen units* of High School or other secondary school work. work. This credit can be secured:

1. By examination.
2. By certificate from an accredited school.
3. By transfer from some other University or College.

*A unit represents a subject pursued five periods a week for one school year.

Of the fifteen units required for admission, 9½ are specified as follows:

*English	3
Algebra	1½
Plane Geometry	1
History	1
Foreign Languages	2

The remaining 6½ units may be selected at will from the following list:

Trigonometry	½	Geology	½ to 1
Solid Geometry	½	Agriculture	½
Surveying	½	Physical Geography	½
French	1 to 3	Civil Government	½
German	1 to 3	Psychology or Pedagogy	½
Spanish	1 to 3	Political Economy	½
Latin	1 to 4	Commercial Geography	½
Greek	1 to 3	Commercial Arithmetic	½
History	1 to 3½	Manual Training	½
Physics	1	Bookkeeping	½
Botany	½ to 1	Free Hand Drawing	½
Chemistry	½ to 1	Teaching one year or more on First Class Certificate	1
Zoology	½ to 1		
Physiology	½ to 1		

A student will be received and classified as first year Law student if he offers as many as thirteen of the fifteen units, but he must make up the two additional units before the beginning of his second year's work.

College Work.

All candidates for graduation who are under twenty-one years of age when matriculated, beginning the last year of the law course, complete at least fifteen credits of college work equivalent to the Freshman year of this University. This work will be chiefly elective, but must be so chosen as to satisfy the Dean, and must include English, History and Forensics. Credit for this work or any part of it, will be received from other acceptable schools.

*Graduates of first class High Schools who have had four full school years' work in English of five recitations per week may offer four units in English.

No subject offered as an entrance requirement can be counted again in the total credits required for the completion of a college course.

Advanced Standing.

Applicants for admission to advanced standing in law must first satisfy the foregoing entrance requirements. By presentation of satisfactory certificates issued by an approved law school, which requires entrance credits equal to above, or by examination, such applicants may then obtain any advanced credits in law to which they are entitled. For admission to the Junior year, satisfactory evidence must be shown of the completion of the work of the first year of the course in law or its equivalent. For admission to the Senior year, evidence must be shown of the completion of the work of the first and Junior years of the course in law or its equivalent. All law credits offered for advanced standing must be submitted to the Dean for adjustment. In no event will credit be given for more than two years' work done outside of this College.

Special Students.

Persons who are at least twenty years of age, whose preliminary preparation is not such as to entitle them to enter the regular courses as candidates for a degree, or persons who have read law for a considerable period before making application for admission, and such reading has not been sufficiently extensive to bring them within the rules for admission for graduation, are allowed to become special students, with the privilege of pursuing the courses of study, in any of the specified subjects, but without the privilege of being enrolled as candidates for a degree. All such students must satisfy the Law Faculty that they are qualified to pursue the work with profit to themselves, and will be required to complete the subjects selected with the same throughness as regular students.

Should a special student desire subsequently to become a candidate for a degree, he must make up all the work required for the entrance examination and do the required college work before the beginning of the year in which he proposes to graduate.

DEGREES AND SPECIAL PRIVILEGES.

The Degree of Bachelor of Laws (LL.B.)

The degree of Bachelor of Laws (LL.B.) will be conferred upon students who have satisfied the entrance requirements, completed the college work and the work in Law as prescribed, have passed the final examination and have reached the age of twenty-one years.

The Degree of Master of Laws (LL.M.)

Persons who can offer the required entrance credits and are regular graduates from an acceptable Law School, may become candidates for the degree of Master of Laws (LL.M). For details concerning this degree see the announcement of the Graduate School.

Certificates.

A student who has been connected with the college for a period not entitling him to graduate, may on application to the Dean receive an official certificate of attendance and the degree of his attainments in the subjects taken.

Removal of Conditions.

Students who fail to receive their degree in due course, because of conditions in the law work, will be permitted to remove those conditions at any time not later than one year after the graduation of their regular class. Further time may, however, be granted by a vote of the Law Faculty.

Combined Arts—Law Course.

Seniors in the College of Arts and Science may elect as part of the requirements for graduation in that college courses from the first year's work in the College of Law. By so doing they will be able to shorten from seven to six years the time required to earn the degrees in both courses.

Special Lectures.

Special lectures will be delivered during the year by eminent lawyers, covering many phases of the law and including procedure, legal ethics, and other allied subjects.

Privileges and Library.

Students of the College of Law will be admitted to all the privileges of the literary societies, gymnasium and University library, upon equal terms with other students of the University. They may also attend any of the classes or lectures in other departments of the University without extra charge. A law library containing 7,000 volumes of carefully selected law books has been accumulated and placed in the library rooms of the department, and is open daily for the free use of students. This library embraces the entire National Reporter System, which gives us

all the reported cases of the U. S. Supreme Court, the Federal Courts and each State Court, for the past thirty years, and also the digest of all reported cases from 1658 to the present time; the reported cases of the U. S. Supreme Court and many States from the first reported cases down to the issuing of the first reported cases down to the issuing of the National Reporter System; a complete set of all English reported cases from 1650 to the present time; Holsbury's Laws of England. CYC., L.R.A., encyclopedias, what is known as the "Trinity System," and many other valuable sets of law books. Also a large selection of text books.

Henry Clay Law Society.

The Henry Clay Law Society is an organization composed of the law students, which convenes once each week in a hall provided for its use. In this society the students by study and actual practice will learn the rules of parliamentary law and their use in deliberative assemblies. They will organize legislative assemblies and learn the procedure in the framing and passage of bills, both State and Federal. Subjects of a public nature will be discussed so as to familiarize the students with the affairs of the country which will confront them in their experience as citizens and professional men.

PRIZES.

The American Law Book Co. Prize.

The American Law Book Co., of New York, offers a prize to the student who makes the best general average during the year, a set of Student's Edition of CYC in twelve volumes which set is a reproduction of the text of the forty volume edition of CYC.

Callaghan & Co. Prize.

Callaghan & Company, Law Book Publishers of Chicago, offer as a prize to the student of the Junior year who makes the best general average a copy of the Cyclopedic Dictionary.

METHOD OF INSTRUCTION.

The method of instruction pursued will be the use of text-books, lectures, cases, and such other methods as the Faculty may deem advisable. The value which the study of cases possesses, in illustrating the practical application of legal principles, is fully appreciated, and in addition to the use of prescribed case books the student will be required

to use the library freely, in searching for cases illustrative of the principles taught him. He will be required to present the result of his investigation in the law library, to the class-room, that the subject may be discussed before the class until thoroughly understood.

Examinations will be held on each subject as it is completed, and a general examination will be held at the end of the year upon the entire year's work.

Moot Court.

The student enters more thoroughly into the spirit of his law work and obtains a clearer understanding if he is given exercises from which he may draw conclusions by applying his knowledge of the principles of the law taught him in his class. Therefore students in the second year of their law course are required to do an amount of moot court work, which is based upon assumed statements of facts given by the Professor in charge. From the statement of facts, each member of the class is required to draw his own conclusion as to what principle is involved, and support his conclusion by the law he is able to gather from his investigation in the law library of Text-books and Court Decisions. The reports are made by the students and debated before the class. This plan teaches the student how to analyze facts, how to find apply the law, and how to present his case and debate it. Criminal procedure will also be taught in this connection.

Practice Court.

The training given in a law school is not complete unless the student acquires a knowledge of actual practice. This is secured by the introduction of the Practice Court, which is presided over by one of the professors, and this work is required of all students in their Senior year. A room is especially equipped for this work, with all the furnishings usually found in a well regulated court-room. The Court will be provided with a full corps of officers made up of the students, each of whom will alternate in official service until each member of the class has had sufficient practice to become familiar with the duties of each office.

Students will be required first to acquaint themselves with the various courts, their jurisdiction, original, concurrent and appellate. They will then be required to carry many default cases in Common Law in Equity, from the filling of the original papers to the conclusion. Each student will be required to write out in long hand and explain all steps possible to be taken in each case including the duties to be performed by

the various officers of the court. In this connection they will be taught the actual use of the practice code of this and other States, as well as the appliration of the Common Law procedure.

Many cases will be prepared setting forth facts upon which issues will be joined. For the purposes of this work, court will be opened in the contests making issues, the practice of handlng subsequent pleadings, demurrers and motions of every kind will be experienced.

Contested equity cases will be made upon given statement of facts, students will be assigned as attorneys on each side of the cases, other students will act as special judges of the court. In each case, the attorneys will be required to thoroughly look up the law, debate their cases before the special judges, and file briefs with same, The court will deliver written opinions. Students will alternate in this kind of service.

Actual controversies will be arranged and assigned for trial on issues of fact before regularly impaneled juries made up of students, when witnesses will be examined, depositions and and other evidence heard, juries instructed upon the law of the cases, arguments made before the court and jury, and all other incidents of a contested trial will be had. Some of these cases cases will be prosecuted to the Court of Appeals.

Students will at intervals attend the courts of Fayette County which are in contiuous session. Experience gathered there and and in the practice court of the College will give a good knowledge of the practical part of the course of instruction.

Students who may desire to spend some part of their spare time in the office of a practicing Attorney, in order to gain some acquaintance with the office work and the manner of handling business by the active practictioner, will have this opportunity offered them.

OUTLINE OF COURSE OF STUDY.

FIRST YEAR.

1. **Study of the Common Law.** Blackstone's *Commentaries* and Robinson's *Elementary Law.* Three hours per week. First semester. (CHALKLEY)

2. **Domestic Relations.** Husband and wife, parent and child, guardian and ward, master and servant and infancy; instruction in the keeping of all documents and court records connected with these relations. Text-book: Schouler's *Domestic Relations* and Cooley's *Cases.* Three hours per week. First semester. (TOWNSEND)

3. **Torts.** This course deals with all phases of the subject. Text-book: Bigelow on *Torts*. Cases. Two hours per week. First semester. (KERR)

4. **Contracts.** Elements and principles, formation, classification, the various relations and laws governing same. Tests in the formation of contracts. Text-book: Clark on *Contracts*, Throckmorton's *Cases*. Two hours per week. First and second semester. (VAUGHN)

5. **Real Property.** This subject is treated fully, including instruction in conveyancing, abstracting, and the keeping of real estate court records. Text-book: Tiedeman on *Real Property*. Lectures and cases. Two hours per week. First and second semesters. (CHALKLEY)

6. **Agency.** The creation, dissolution, and incidents. Text-book: Mechem's *Outline of Agency*. Study of cases. Two hours per week. Second semester. (TOWNSEND)

7. **Partnership.** Formation, dissolution, liabilities, and consequences; Text-book: Mechem's *Elements of the Law of Partnership*. Study of cases. Two hours per week. Second semester. (TOWNSEND)

8. **Criminal Law.** The general principles of Criminal Law, the elements and classification of crimes, proceedings in criminal cases. Text-book: Clark's *Criminal Law*, Mikell's *Cases*. Three hours per week. Second semester. (LAFFERTY)

9. **Bailments and Carriers.** Origin and history; the various kinds of persons and companies classified under this head and the laws regulating same. Text-hook: Schouler on *Bailments and Carriers*. Cases. Two hours per week. Second semester. (KERR)

JUNIOR YEAR.

11. **Common Law Pleading.** A study of the original plan of common law pleading, the present plan of its practice, and extent of its use. Text-book: Perry's *Common Law Pleading*. Shipp and Daish cases. Two hours per week. First semester. (CHALKLEY)

12. **Evidence.** This course covers the rules of evidence as developed by the common law, and the rules in general use in all courts. Also the procedure in court in the treatment of all questions of evidence. Text-book: Greenleaf on *Evidence*, Vol. 1, fifteenth edition. Select cases. Three hours per week. First semester. (CHALKLEY)

13. **Insurance.** History, nature and general principles of insurance law, applicable to all kinds of insurance. Samples of all kinds of policies

issued are used in class. Text-book: Vance on *Insurance.* Cooley's *Cases.* Two hours per week. (CHALKLEY)

15. **Bills, Notes and Checks.** This course deals with the law and business application of the subject. Text-book: Bigelow on *Bills, Notes and Checks.* Moore's cases. Two hours per week. First semester. (LAFFERTY)

16. **Corporation.** The nature and classes of corporations, their creation, charter and organization; franchises, powers, and limitations, consolidation, forfeiture of charter and the laws regulating corporations. Practice work in creating corporations. Text-book: Elliott on *Private Corporations.* Study of cases. Two hours per week. First and second semesters. (BUSH)

17. **Equity.** The origin and development of equity jurisprudence, general maxims, an exhaustive study of the principles and application of the subject. Text-book: Bispham's *Equity, Student's Edition.* Study of cases. Two hours per week. First and second semesters. (ALLEN)

18. **Real Property.** Continued from first year, including conveyancing and other transactions relating to real property. Burdick's *Cases on Real Property.* Two hours per week. Second semester. (CHALKLEY)

19. **Code Pleading.** A study of the general rules adopted in the various code States, but particular attention is given to the rules in use in this State. The student is instructed in the framing of all kinds of pleadings, demurrers, etc. Sunderland's *Cases on Code Pleading.* Two hours per week. Second semester. (CHALKLEY)

20. **Principles of Sales.** Text-book: Benjamin's *Principles of Sales.* Study of cases. Two hours per week. Second semester. (NICHOLS)

21. **Personal Property.** Distinction between real and personal property; acquisition of title to personal property, by accession, confusion, gift, occupancy and finding; property rights of bailor and bailee; deed, transfer and lien. Text-book: Schouler's *Law of Personal Property.* Gray's *Cases on Property* (2nd ed.), vol. 1. Two hours per week. Second semester.

22. **Moot Court.** This work will embrace the study of law and its applications to given statements of facts, brief making, argumentation and the study and practice of uncontested matters such as the lawyer handles in his office. Criminal Procedure. Two hours per week. Second semester. (LAFFERTY)

SENIOR YEAR.

23. **Damages.** This course deals generally with the subject of damages, the kinds, measure and procedure. Text-book: Sedgwick's *Elements of the Law of Damages.* Cooley's *Cases.* Two hours per week. First semester. (CHALKLEY)

14. **Wills and Administration.** Persons who make a will, what may be willed, what constitutes a valid will. Preparation of wills, procedure in the qualification of an executor and administrator, settlement of estates, etc. Text-book: Bigelow on *Wills.* Cases. Two hours per week. First semester. (LAFFERTY)

24. **Conflict of Laws.** A careful study is made of the comparison of theories and practice in various jurisdictions, as to both civil and criminal matters, and with Interstate Law in the United States. Text-book: Minor's *Conflict of Laws.* Lorenzen's *Cases.* Three hours per week. First semester. (LAFFERTY)

25. **Elements of Constitutional Law.** A study of American Federal and State Constitutional Law, departments of government, legislative, executive, and judicial; jurisdiction of the State and Federal Courts; construction and conflicts of the various constitutions, and the laws on same. Text-book: Hall's *Cases on Constitutional Law.* Two hours per week. First semester. (CHALKEY)

26. **Practice Court.** Practice court work, code and statute law, including all lines of work elsewhere set out under general title "Practice Court." Three hours per week. First and second semesters. (LAFFERTY)

27. **Roman Law.** History of the Civil Law, its growth and present scope. Also its effect and influence upon the laws of the United States. Text-book: Howe's *Studies in Civil Law.* One hour per week. First semester. (TIGERT)

28. **Quasi Contracts.** Obligations based upon contractural relations, and imposed upon equitable rules. Text-book: Keener on the *Law of Quasi Contracts.* Lectures and cases. Two hours per week. Second semester. (CHALKLEY)

29. **Trusts.** Nature and intents of Trust relations, methods of creating Trusts, rights and obligations of Trustees and Beneficiaries, resulting and constructive Trusts, charitable Trusts. Kenneson's *Cases on Trusts.* Two hours per week. Second semester. ( )

30. **Administrative Law.** Administrative power and action, discre-

tion; form and proof of official acts; notice. Relief against administrative action; action to recover damages; specific relief; jurisdiction and judicial control. Text-book: Goodnow's *Administrative Law*. Two hours per week. Second semester. (CHALKLEY)

31. Study of Statute Law. A detailed study and critical analysis of the statute from the standpoint of their structure, interpretation, construction, application, and relation to each other, together with a consideration of the fundamental principles of the law which they affect. Two hours per week. Second semester. (CHALKLEY)

32. Jurisdiction and Procedure in the Federal Courts. Course of lectures will be delivered upon the history and creation of the Federal Courts, their jurisdiction and procedure. Second semester.
(PRESIDENT BARKER)

33. Bankruptcy. Law and procedure. Courses of lectures.
(LAFFERTY)

SUMMER COURSE IN LAW.

In connection with the summer courses of instruction offered by State University, the College of Law will offer special courses in law, beginning June 14, 1915, and continuing eight weeks. These courses will be given on many of the subjects set out in the regular courses, and are offered for the benefit of those who have not completed the work of the previous year and wish to continue the law course to its completion; for those who are preparing for admission to the bar and have had no training in a Law School; for lawyers or students who wish to review the law to familiarize themselves with the theory, or to prepare for advanced standing in pursuing the law course to graduation in this University. Work successfully completed during the summer term will be credited as if done during any regular term, thereby lessening to that extent the period of time necessary for graduation.

Students who enter the Summer Law School will be permitted to supplement their law studies by taking instruction in any of the classes in other departments of the University without extra charge. The surroundings of the University are peculiarly favorable for summer work. The campus of fifty-two acres is well located, well elevated, and covered with trees and shrubbery.

The tuition for the summer term is $12.50. Students will be allowed to room in either of the two large dormitories, including use of furniture and lights, for a nominal sum. Meals may be had at prices ranging from $3.00 to $4.00 per week.

THE GRADUATE SCHOOL.

A. S. MACKENZIE, DEAN.

GENERAL INFORMATION.

Organization.

For a number of years several Departments have offered advanced work leading to a Master's degree in Arts or Science or to a second degree in Engineering. At its annual meeting in May, 1912, the Board of Trustees of this University, acting upon the suggestion of the President, formally authorized the organization of a Graduate School, and thereafter the President appointed an Executive Committee, whose chairman is the Dean. The Graduate School has exclusive control of all graduate work done in the University.

Facilities.

The scientific laboratories are the best equipped in the Commonwealth, some of them comparing favorably with those of similar institutions in the Middle West.

The libraries comprise the General Library, the Agricultural, Engineering and Law Libraries as well as those of the various departments of the College of Arts and Science. Graduate students may also consult the public libraries of Lexington, Louisville and Cincinnati. Arrangements are being made whereby the extensive collections of some of the older institutions of learning may be freely consulted.

Even now, however, students find that one of the chief assets of the Graduate School is the opportunity for direct supervision of their work by men who have been trained and recognized by Universities such as Cornell, Edinburgh, Glasgow, Goettingen, Harvard, John Hopkins, McGill, Oxford, Pennsylvania, Purdue, Wisconsin and Yale.

As far as possible, it is intended to institute Fellowships exclusively for worthy students who are pursuing a regular iine of work in the Graduate School.

Aims.

Every person in Kentucky or elsewhere, provided he has the aptitude and the necessary training, is welcomed to the Graduate School.

The object of undergraduate training is to enable the student to survey with understanding and enthusiasm the field already partially explored and to give him some appreciation of the problems that await solution. The object of the Graduate School is to make sure that the field of the known has been surveyed with reasonable thoroughness and then to guide the student toward the mastery of some really worthy problem that may render the general body of ascertained knowledge more intelligible.

In other words, for years the student, as his very name implies, indulges in search before he attempts research, and many a man secures his bachelor's degree who is innocent of that poise, that undying mental curiosity and brain power which are requisite in the critical study of achieved results or in any serious investigation. It is the purpose of this school to establish a reputation for sane scholarship, and to maintain without pretentiousness a standard of enlightened specialization so far as our means and intelligence permit.

Candidacy and Residence.

1. Candidates for a higher degree, whether resident or non-resident, will first communicate with the Dean of the Graduate School.

2. No graduate students will be regarded as candidates for a degree, unless admitted to candidacy by the Executive Committee of the Graduate School.

3. Registration for study in absence is permissible only to accepted candidates for advanced degrees. Residence whereever a student may be directed by the Graduate School Committee to prosecute systematic investigation is regarded as residence at this University.

4. No summer work will at present be recognized unless such work is prearranged with the Dean of the Graduate School.

5. Every graduate student in residence, whether a candidate for a degree or not, must be in actual attendance on at least one regularly authorized course of instruction; and this attendance must amount to at least four hours a week exclusive of thesis work.

6. Prior to matriculation all prospective graduate students, resident or non-resident, must receive the sanction of the Graduate School Committee. Prior to the assignment of work each student will submit a receipt from the Registrar showing that the fee of $15.00 has been paid.

7. Every graduate student who is a candidate for a higher degree must file with the Secretary of the Graduate School, at least eight months before the time proposed for examination, a detailed schedule of studies on which the candidacy is based.

REQUIREMENTS FOR DEGREES.

The Master's Degree.

1. For major work the course or courses must be strictly graduate courses. The minor or minors may be such courses as will best contribute to the efficiency of the major study.

2. The student must be in residence at least one year, or for three summer terms, in courses approved by the Graduate School Committee. Non-resident students, who are candidates for a Master's degree *in absentia*, will do at least three years' work, part of which must be spent at this university in consultation and examination. Instructors under whom graduate work is being done will in January and May of each year submit to the Committee a report of work done by the candidate as well as the outcome of the examination in residence. At any time a candidate may be debarred from the privileges of the Graduate School for inefficiency. At stated intervals all resident students will appear for consultation before the committee.

3. In every instance the thesis, typewritten or printed, must be approved (a) by the major professor, (b) by the Graduate School Committee.

4. The corresponding bachelor's degree must have been taken before a candidate in residence may hope for the master's degree. For instance, if a Bachelor of Science desires the degree of Master of Arts he must make up all the necessary undergraduate work before he can be regarded as a regular member of the Graduate School. No bachelor of arts from any institution, however exalted, can become a candidate for the degree of A.M., unless he has studied collegiate Latin in a satisfactory manner. These degrees are given, in no case, *honoris causa*.

5. At least thirty days before the date when second degrees are conferred, each candidate must submit a thesis in accordance with Rule 3 preceding.

Degrees in Engineering.

1. A candidate for the degree of Civil Engineer must hold the Bachelor's degree from the College of Civil Engineering of this University, or must have pursued successfully at some reputable institution a course of study equivalent to the degree of B.C.E. conferred by this University.

2. A candidate for the degree of Mechanical or Electrical Engineer must hold the Bachelor's degree from the College of Mechanical and Electrical Engineering of this university, or must have pursued success-

fully at some reputable institution a course of study equivalent to the degree of B.M.E. conferred by this University.

3. A candidate for the degree of Mining Engineer must hold the Bachelor's degree from the College of Mines and Metallurgy of this Uuiversity, or must have pursued successfully at some reputable institution a course of study equivalent to the degree of B.M.E. conferred by this University.

4. Second degrees are conferred upon such graduates of the Colleges of Engineering of this University as have been engaged in acceptable professional work away from the University for at least three years after receiving the Bachelor's degree, or upon graduates of this University or of Universities of equal standing engaged in prearranged residence work at the University for at least one year after receiving the Bachelor's degree.

5. At least thirty days before the date when the second degrees in engineering are conferred, each candidate must submit a thesis which will satisfy (a) the major professor and (b) the Graduate School Committee.

The Doctor's Degree.

1. No student shall be enrolled as a candidate for a doctor's degree until he has been in residence as a graduate student for at least one year. This rule may be waived in the case of those who have taken the Master's degree at another reputable University.

2. Candidates who hold the Master's degree may complete the work required for the degree of Ph.D. within three years, although this is the minimum. This degree will not conferred for faithful work merely, but for original and worthy investigation. No doctor's degree will be conferred for work done *in absentia* or *honoris causa*.

3. No student will be regarded as a candidate for the degree of Doctor of Philosophy who has not a good reading knowledge of French and German as well as any other language essential for the mastery of his special line of work.

4. The thesis must prove satisfactory to (a) the major professor (b) the Graduate School Committee, (c) two or more independent specialists in two or more independent institutions of repute. After it has received the foregoing triple sanction, the thesis will be printed, one hundred and fifty copies of which will be used for exchange with other University libraries.

DEPARTMENTS OF INSTRUCTION.

CHEMISTRY.

Professor Tuttle, Professor Maxson, Assistant Professor Daniels.

In the Department of Chemistry courses of study leading to the Master's degree are provided in Inorganic, Organic, Physical and Analytical Chemistry. Under the following heads a considerable choice of work is offered.

1g. Synthetic Inorganic Chemistry.
2g. Organic Chemistry.
3g. Physical Chemistry.
4g. Analytical Chemistry.

EDUCATION.

Professor Noe.

For courses in this Department open to undergraduates and graduates, see, in the preceding portion of the catalogue, Courses 8, 12, 13, 14, 15.

16. **Seminary in Educational Problems.** Investigations of some problems in educational psychology and some practice in experimental education. The class will meet weekly for a two-hour session. Time to be arranged. (NOE)

17. **Seminary in Administration and Supervision.** The work will consist chiefly of individual studies and reports. The class will meet weekly for a two-hour session. Primarily for graduates. Time to be arranged. Thesis work by appointment. (BAKER)

ENGLISH AND COMPARATIVE LITERATURE.

Dean Mackenzie.

The following courses are for graduate students exclusively.

ENGLISH LANGUAGE.

1g. **English Philology.** Keltic and Norse elements in our language and their influence on syntax, orthography, etc.

2g. English Philology. Hebraic and Hellenistic traces in English syntax; loan word fallacies; the rise of Scots, etc.

3g. Comparative Philology. Elements of Gothic, Sanskrit or Hebrew compared with some modern languages.

4g. Textual Criticism. Dialects, etc.

5g. Special Study. The instructor is ready to assist and advise competent students who may suggest plans of special study which receive official sanction.

ENGLISH LITERATURE.

6g. Literary Problems. Details will be arranged by consultation.

COMPARATIVE LITERATURE.

7g. Methodology.

8g. Bibliography of a Type.

9g. Origin of Poetry.

10g. Magic Songs and Hymnography.

11g. Special Study. Literary work, satisfactory to both student and instructor, may be determined by consultation with Dean Mackenzie.

GEOLOGY.

Professor Miller.

Professor A. M. Miller will gladly answer inquiries from prospective graduate students in Geology. Work may be arranged after consultation.

GREEK.

Professor Terrell.

8. Plato and Aristotle. Plato's Republic will be studied the first half year. A close and analytical study will be made of this famous work. Special attention will be given to Plato's ideas of education, socialism, attitude toward the fine arts and other points of striking interest, Lectures by the professor and papers by the students on special topics.

Aristotle's Politics will form the basis of the work in the second half year. This will be read in connection with the recently discovered constitution of Athens. These two courses will be a study in the science of Government and Politics as conceived by the two greatest Greek writers on these subjects. These two works are among the world's greatest

classics on the subjects treated, and can never be out of date so long as human nature is constituted as it is.

HISTORY AND POLITICAL ECONOMY.

Professor Tuthill.

HISTORY.

Graduate students seeking the Master's degree must first complete the college courses numbered 1, 3, and 4, or their equivatents. They should also present one college course in the history of the United States, or a course which treats of American Government, such as Political Science 1. In addition, one or more foreign languages will be expected, according to the character of the courses attempted. The Department will encourage students frnm other institutions of learning to defer application for the higher degrees until the end of the first term. The following courses are available:

10. **Pro-Seminar in European History.** This consists of the reading, translation and study of a selected chronicle. Open to graduates only. Two hours per week for a half year.

8. **The Teaching of History.** Designed to take up special problems and aids in class-room work of high school and college. Open to seniors of the Department of Education and graduates. Two hours per week. Second semester.

POLITICAL ECONOMY.

Political Economy may be taken as a minor only. The following courses are offered:

13. **Pools and Trusts.** A study of agricultural and commercial agreements and court decisions thereon. Open to undergraduates who have completed courses 1 and 2, and to graduates. Two hours per week. First semester.

14. **Statistics.** A study of averages, weighting, criticism, and practical exercises. Two hours per week. Second semester.

POLITICAL SCIENCE.

3. **Comparative Constitutional Law.** A comparative study of the governments of the greater nations of America and Europe. Prerequisite, Political Science 1. Two hours per week. Throughout the year.

MATHEMATICS.

Professor Boyd, Professor Davis, Associate Professor Rees.

The following courses are available for graduate students. Some of the courses are open to undergraduates also, while others are for graduate students only. The courses are so planned that a graduate student may find plenty to occupy his time as a major for at least two years.

7. **Graphical Analysis and Determinants.** A study by graphical methods of the fundamental principles of analysis and a presentation of the elements of curve tracing. This is followed by a brief course in determinants. Lectures. Omitted in 1914-1915; to be given in 1915-1916. Three hours per week. First semester. (REES)

8. **Vector Analysis.** A through study of the algebra of vectors with numerous applications to line geometry and solid analytics. Also a brief introduction to the calculus of vectors with applications to differential geometry, mechanics and physics. Text: Gibbs-Wilson's *Vector Analysis.* To be supplemented by lectures. Omitted in 1914-15; to be given in 1915-16. Three hours per week. Second semester. (REES)

9. **Theory of Equations.** An introductory course given chiefly by lectures and based on some standard text Given in 1914-15; omitted in 1915-16. Three hours per week. First semester. (REES)

10. **Advanced Analytics.** This course is designed to present the extended theory connected with conic sections and to serve as an introduction to a later course in the general theory of algebraic curves. Text: C. Smith's *Conic Sections.* Given in 1914-15; omitted in 1915-16. Three hours per week. Second semester. (REES)

11. **Differential Equations.** A study of the theory of ordinary and partial differential equations, with applications to physics and mechanics. Text-book work supplemented by lectures and reports. Text: Cohen's *Differential Equations.* Omitted in 1914-15; to be given in 1915-16. Three hours per week. Throughout the year. (DAVIS)

12. **Advanced Calculus.** A second course in calculus, affording a more critical view of the fundamental notions theorems and including the study of elliptic integrals and functions defined by definite integrals. Work based on the texts of Byerly and Williamson. Given in 1914-15; omitted in 1915-16. Three hours per week. Throughout the year. (DAVIS)

13. **Projective Geometry.** This course provides a study of the content and the methods of modern synthetic geometry. It is also designed as an introduction to a later course in geometric transformations. Text: Cremona's *Elements of Projective Geometry*. Omitted in 1914-15; to be given in 1915-16. Three hours per week. Throughout the year. (BOYD)

14. **Teachers' Course.** Given in 1914-15. Two hours per week. First semester. (BOYD)

15. **Geometric Transformations.** Homogeneous coordinates are first developed from the standpoint of anharmonic ratios. After this the projective transformations in the binary, ternary and quaternary fields are studied in order. Omitted in 1914-15; to be given in 1915-16. Three hours per week. Throughout the year. (BOYD)

16. **Theoretical Mechanics.** The customary course in the theory and problems of kinematics, statics and kinetics, it being the purpose to emphasize the mathematical side of the subject perhaps more than the practical. Offered for 1915-16. Three hours per week. Throughout the year. (BOYD)

17. **Algebraic Curves.** This course will be based on the works of Salmon and Wieleitner and will require a reading knowledge of French and German. Given in 1914-15. Three hours per week. Throughout the year. (BOYD)

18. **White Mathematics Club.** The Club meets once a week. A book is adopted for study each year, and the members of the club take turns in leading the discussion of assigned parts. In addition, talks on special topics of interest are presented. Graduate students are expected to attend regularly.

19. **Thesis.** Students doing thesis work meet the head of the department once or twice a week for consultation. (BOYD)

LATIN.

Professor Jones.

11. **Roman Satire.** The history of the development of satire will be traced and the following authors will be read in whole or in part: Ennius, Lucilius, Horace, Petronius, Persius, Seneca, Juvenal.

MODERN LANGUAGES.

Professor Zembrod.

FRENCH.

4. Romanticist Novel and Drama. The Romanticist Novel and Drama of the 19th Century will be studied. This will be offered to a class of not less than six students. Prerequisite courses, French 2 and 3. Tuesday fourth hour, Friday at the third hour. Two hours per week. Throughout the year.

GERMAN.

7. 19th Century Novel and Drama. Prerequisite courses, German 5 and 6. Monday and Wednesday at the third hour. Two hoursper week. Throughout the year.

PHILOSOPHY.

Professor Tigert.

4. Psychology. The purpose of this course is to investigate certain of the most important problems of abnormal psychology, such as the phenomena of dreams, hypnosis, spiritism, etc, Students are encouraged to make independent investigations and to do original work along these lines. This work is not advisable for those who have not completed a course in normal psychology. Text-book: Jastrow's *Fact and Fable in Psychology.* Two hours per week, throughout the year.

5. Philosophy. This work is designed for those who desire to do advanced work in philosophy and it is essential that students should have completed one or more of the undergraduate courses before undertaking it. Here the student is introduced to the problems of Philosophy proper, including metaphysics and epistemology. Under the former head, theories of cosmology, including atomism, theism, and pantheism are explained and discussed, together with the ontological doctrines of materialism, idealism, and dualism. Under the latter head, realism, phenomenalism, rationalism, and empiricism are examined with the view of forming a clear and consistent theory of knowledge. Students will be required to read the sources in connection with lectures. Text-book: Paulsen's *Introduction to Philosophy.* Three hours per week. First semester.

6. Ethics. This is a study of the first principles of moral science

but is adapted for advanced students, especially as a continuation after completing course 5. It includes the exposition of the principles of right and wrong and endeavors to make a practical application of these. Virtues and duties are defined and discussed. Text-book: Paulsen's *System of Ethics*. Three hours per week. Second semester.

PHYSICS.

Professor Pence.

Professor Pence will receive students wishing graduate work in Physics, provided they have the necessary preliminary training.

AGRICULTURE.

Dean Kastle, Professor Matthews, Professor Garman, Professor Hooper, Professor Peter, Professor La Bach, Professor Good, Professor Roberts, Professor Healy.

In the College of Agriculture and in the Experiment Station, excellent opportunities are afforded the student to do graduate work in the following subjects: Soil fertility, soil physics and farm crops, dairying and poultry husbandry, animal nutrition and the feeding of live-stock, the study of market classes of beef cattle, sheep and swine, agricultural chemistry, entomology, seed analysis and plant breeding, the cultivation, curing and grading of tobacco, food and drug technology, bacteriology and animal pathology, including studies in immunity, hog cholera, etc.

Deserving students who have graduated from the College of Agriculture are given every opportunity to pursue some special line of work in the Station, where they come in contact with investigators and men of high standing in the sciences pertaining to agriculture. As a rule students who have taken such work at the Station have secured good positions elsewhere: There is now a constant demand for men trained in the several branches of Station work. The graduate student in Agriculture may select any one of the above subjects as a major study leading to the degree of Master of Science in Agriculture. Two or more minor subjects will be assigned. At least one year's resident work at the university will be required of candidates for the degree of Master of Science in Agriculture.

CIVIL ENGINEERING.

Dean Rowe.

Majors.

a. Railway Location and Construction.
b. Yards and Terminals,
c. Motive Power and Rolling Stock.
d. Railway Operation and Management.
e. Metallic Arches.
f. Bridge Design.
g. Reinforced Concrete.
h. Water Power Development.
i. Engineering Jurisprudence.
j. Sanitary Engineering.

Minors.

Minor subjects may be selected from Mechanical, Electrical or Mining Engineering subjects, or from the various departments in the College of Arts and Science.

MECHANICAL AND ELECTRICAL ENGINEERING.

Dean Anderson, Professor Frankel, Professor Freeman.

The College of Mechanical and Electrical Engineering is prepared to offer graduate courses in the following subjects: Steam Engineering; Electrical Power Engineering; Gas Engineering; Illuminating Engineering; Heating and Ventilating; Telephone Engineering; Mechanics of Engineering; Wireless Telephony and Telegraphy Engineering.

The advanced degree, M.E. (Mechanical Engineer), or E.E. (Electrical Engineer), may be obtained by a resident student one year after taking the degree B.M.E. from the State University of Kentucky, or any institution of equal requirements, provided he has done the work assigned him satisfactorily, passed his examination, and presented an acceptable thesis.

A non-resident student may obtain the degree of M.E., or E.E., three years after graduation, if he has been engaged in practical engineering work during that time, passes an examination, and presents an acceptable thesis. At least one year's notice must be given to the Dean of the Graduate School that graduate work is being done, and the work must be approved by the major professor and by the Graduate School Committee.

MINING AND METALLURGY.

Dean Norwood.

For the degree of Mining Engineer (E.M.), Ore Dressing, Milling, Coal Mining, Metal Mining, Mine Plant, Metallurgy, or Elcctricity Applied to Mining, may be selected as major study; and minor studies may be assigned from Civil Engineering, Mechanical Engineering, Electrical Engineering, Geology, Chemistry, Physics, Mathematics, Political Economy, English, Spanish or German.

For the degree of Metallurgical Engineer (Met.E.) Metallurgical Mill Construction, Ore Dressing, Milling, Fuel Testing and Purchasing, Heat Treatment of Steel (practical study), Electrometallurgy, Alloys, advanced Metallurgy, (including steel and other metals), or some other approved problem in Metallurgy may be selected as major study; and minor studies may be assigned from Mining Engineering, Mechanical Engineering, Electrical Engineering, Civil Engineering, Physics, Mathematics, Pyrometry, Clay Burning, Electrolytic Refining, Economics, English, Spanish or German.

GRADUATE CLUB.

The Graduate Club has been organized to promote the spirit of fraternity and research among graduate students. It hopes to cooperate toward a national movement involving federation of all American graduate clubs.

FELLOWSHIPS.

The following fellowships, subject to the approval of the Board of Trustees and the President of this University, are appointments open to students of any reputable University, who desire to enter the Graduate School in order to pursue studies in a special department of learning. Prospective fellows must have already evinced a distinguished ability in their undergraduate work. The fellowships vary in value from $200 to $600 per annum.

All appointments to fellowships are made for one year only, though they may be awarded for a second year.

Arts and Science.

Two fellowships in Chemistry; two in English; one in History; three in Mathematics; each of which will bring a stipend of $350 per annum. Each teaching fellowship involves from five to ten hours per

week in the class room and the laboratory, the remainder of the time being devoted to studies in the graduate school.

Engineering.

A research fellowship in Mechanical or Electrical Engineering, whose value is $600 per annum; a teaching fellowship in Civil Engineering to the value of $300 or more per annum, and a teaching fellowship in Mining Engineering to the value of $300 per annum.

Law.

A fellowship in Law which will bring a stipend of $200 or more per annum.

In addition it is expected that one or more fellowships will be offered, in the College of Agriculture, for worthy students who intend to specialize in some phase of Agricultural work.

Wealthy Kentuckians or others who desire to develop leaders of thought, through the medium of this University, are respectfully urged to institute one or more fellowships or scholarships, which will be named for anyone whom they may designate. No more dignified or useful monument to the memory of a deceased relative can be conceived. This form of philanthropy is now in vogue in all civilized countries.

The Dean of the Graduate School will be glad to communicate with those who desire information as to details of the urgent needs of this progressive University. An endowment of $10,000 is usually sufficient to establish a teaching fellowship or a scholarship, whose incumbent will have unusual opportunities of fitting himself to become a leader in the development of the Commonwealth of Kentucky. Each fellowship or scholarship will be administered in accordance with the directions of its founder.

GENERAL UNIVERSITY DEPARTMENTS.

DEPARTMENT OF PHYSICAL EDUCATION.

Professor Anderson, Professor Stout, Mr. Soule, Mr. Roth, Miss Moore.

For Young Men.

Aims.

The work of the Department will be conducted with the following aims in view: (1) The development or improvement of organic vitality, (2) To acquire and maintain a correct posture, (3) To correct physical deformities wherever possible, (4) To establish coordination, grace of motion, reasonable muscular development and bodily skill, (5) To train the faculties of attention, judgement, precision, discrimination, and courage, (6) To develop the "habit of exercise", (7) To promulgate personal hygiene and domestic sanitation, (8) To provide incentive and proper control of systematic physical recreation to counteract the sedentary tendencies of college life, (9) To cultivate high ideals, true sportmanship and efficiency in man agement of athletics in the State, (10) To provide preliminary training for physical educators, directors of recreation systems and coaches of athletics.

Equipment.

The men's gymnasium is located in Alumni Hall, a three story building with right and left wings. The structure is of pressed brick and Bedford stone, 100 x 157 feet. The first floor contains the Armory with an unobstructed floor and is used as a drill hall during bad weather. The offices of the Commandant, the Physical Director for men the Medical Attendant. There is also a large room devoted to boxing, wresting and handball on this floor. The gymnasium with a floor space 48 x 95 feet, contains all the appartus and necessary equipment for carrying on the work of the department. There is an overhead canvass covered running-track of approximately twenty-four laps to the mile. The second floor is occupied by the Y. M. C. A. Hall, the Trustee's room and the offices of the Secretary of the Y. M. C. A. The third floor is occupied by the School of Music, two literary halls for men and Alumni Hall. In the basement of the left wing are the baths, lockers,

washstands, closets and swimming pool. The heating plant for the water and the building is located in the basement of the central portion of the building.

A large athletic field is provided for the use of the men and all intercollegiate and interclass games and meets are held there. The field consists of a football gridiron, baseball diamond, one quarter mile cinder track, tennis courts and two large grandstands. There is a new field of fifteen acres, which is to be devoted entirely to recreation for the mass of students who are not members of a University team. This property contains several football fields, baseball fields and more tennis courts. There are many roads, drives and fields that furnish plenty of courses for cross country running.

Requirements.

Pysical training is required of all students in the University for the first and second years, except Short Course and Special Students, running through five months of the year, two periods per week. Men students are required to be able to swim 100 yards without stopping, by the end of the Freshman year, and a distance of 200 yards by the end of the Sophomore year.

Students will not be excused from the work in Physical Education, unless an equivalent subject is substituted, upon presentation of satisfactory evidence of an equal amount of outdoor activites, evidences of physical deformaties prohibiting gymnastic exercises, completion of similar prescribed courses in other universities, upon written recommendation of a physician subject to change at the discretion of the Medical Examiner.

All students must have attained a minimum standard of bodily development, skill and resistance before specializing in athletic sports.

The required work is designed to give the student a higher degree of vitality, more perfect physical development, greater mental efficiency and muscular coordination.

The college year is divided into two seasons: "Fall," including September, October and November. "Winter" including December, January and February.

During the early Fall and the Spring the work is conducted out of doors as much as possible. The regular indoor work is confined to the Winter months.

Credits to the extent of two (2) units must be secured in Physical Education by the completion of the regular courses. The factors determining these credits are: Regular attendance, effort, efficiency and

the attainment of certain standards in athletics and gymnastics, and knowledge of the principles of hygiene, sanitation and first aid.

Students must provide themselves with suitable clothing for indoor and outdoor activities. The regulation suit consists of white sleeveless shirt, running pants, supporter and rubber soled shoes.

The locker fee is one dollar ($1.00) per year for steel lockers and fifty cents (50c) for wooden lockers. A laundry fee of twenty-five cents (25c) per year per man is required from all Freshman and Sophomores.

Medical and Physical Examinations.

Upon entrance, every student is subject to a clinical examination by the Medical Advisor, to ascertain his fitness to continue in the work of the University. The findings of the Advisor are furnished the Department of Physical Education, and modifications in the form of exercises are made accordingly. A through physical examination made by the Director of this department which includes a limited number of measurments of the body, certain strength tests and a careful survey for any abnormalities of form, structure or function.

Tests of the vision, hearing and color scheme, and a search for nasal, throat or teeth deviations form part of this examination. It is the idea of the department to outline, as far as possible, a course of exercise to suit the individual case, such exercises being prescribed according to the student's physical condition, and directed toward elevating his motor efficiency as shown by his muscular control, endurance, standing position and accuracy of movement.

No student is allowed to participate in any form of competitive games or difficult exercise, unless he be physically capable of such activity as determined by his examination. All members of the University teams are subject to the supervision of the medical members of the department and every precaution is taken to prevent overtraining, exhaustion or permanent injury. Each member must present to the directors a written permit from the medical advisor before reporting for practice with the teams.

All second year men of the colleges of Agriculture, Engineering and Arts and Science will be assigned to class periods by the committees of those colleges. All Freshmen are assigned to periods in the same manner as to other class periods. All assignments must be completed by October 1st, 1915.

All required work of this department begins Monday, October 4th, 1915. All absences on or after that date must be made up.

All applications for athletic excuses must be signed, approved and handed in by October 14, 1914. Absences from required work will not be excused on account of athletics unless application is filed with the Director.

Tournaments and Contests.

The University is a member of Southern Intercollegiate Athletic Association and enters teams in all branches of collegiate athletics. The student must be an amateur and is not eligible for the varsity football team until he has been in the University one college year, must have no conditions in his academic course and must be attending courses amounting to ten (10) hours of credit.

The Athletic Association is a member of the Sigma Delta Psi, the athletic honorary society and encourages, in every way possible, the personal proficiency of the student.

All students are urged to devote one hour daily to recreative exercise, and the facilities of this department are open for this purpose whenever not demanded for prescribed activities. Advice and assistance may be obtained by any student at any time.

Boxing, wrestling, fencing, single stick, etc., will be conducted by special instructors.

In addition to the work given, as outlined above, there will be given to those students who have fulfilled all entrance requirements of the College of Arts and Science, who expect to interest themselves in the coaching of teams or Physical Education after their college career, a course in Practical and Theoretical Athletics and Physical Education will be instituted. This course will have for its foundation, the theory of teaching and coaching, methods of training, first aid and diet. There will be required a certain amount of practical work and actual participation in the work on the part of an instructor. Lectures in Anatomy, Physiology, Kinesiology, Medical Gymnastics, Physical Examinations and Prescription of Exercise will be offered. Only Seniors are eligible for this course. It is the aim of the Department to gradually enlarge this course, having in view the thorough preparation of men for the teaching of gymnastics, coaching of athletics and the work in connection with the play grounds, municipal recreation system, etc.

For Young Women.

Department Aims.

The aims of Physical Education are educational and hygienic: First, to stimulate the functioning of all bodily organs, and to correct defects

of the body external; second, to develop the mental faculties of attention, discrimination, judgment, reaction time and self-control; third, to develop character by the creation of high ideals.

Gymnastics.

A German gymnastic lesson is composed of four parts: Military Tactics, Free Gymnastics, Apparatus Work, Artistic Gymnastics or Classic Dancing.

Students are required to do two hours' work each week in the gymnasium. Physical Education is compulsory for all young women during two years, and as a part of the curriculum is graded as other studies. Pupils must have an examination of heart and lungs by the University physician, and an anthropometric examination by the Professor in charge before entering the work.

No courses looking toward the theoretical side of gymnastics are offered. Excellent work in Anatomy and Physiology is given by Dr. Pryor, but these courses are not given in relation to exercises. To learn the medical theory that underlies physical training the student must attend a Normal School of Gymnastics and take a two or three years course of study in relation to specific exercises. The physical director who teaches exercises without knowing the body is a menace to the community. There are no standard schools of Gymnastics in the South. One must go East for the training.

DEPARTMENT OF MILITARY SCIENCE.

Lieut. Underwood.

"The surest of all ways to invite disaster is to be opulent, aggressive and unarmed."

"To be exposed to some hardship is good for young men. It overcomes that softness and indolence and that senseless pride which in the course of an indulgent education they are apt to contract and gives them a greater manliness and energy of character."

Special Statement.

The Military instruction is in charge of an officer on the active list of the U. S. Army. For students who desire to make Military Science their major, a course of study leading to the degree of Bachelor of Science in the Military Art is offered. This course is broadly cultural

but it is especially suited to those students who intend to enter the Army, the Marine corps, the Diplomatic or the Consular Service.

Purpose.

The department has a two-fold purpose: first, to develop the essential military virtues, neatness, promptness and regularity, truth, courage and loyalty; second, to diffuse among the young men of the state a knowlege of the Military Art so that the nation will have trained and efficient defenders in time of need.

Requirements.

Every male student is required to drill three times each week throughout the Freshman and Sophomore years. The successful completion of two years of military work is *requisite to graduation* in every course in the University. Students who can furnish satisfactory evidence of the equivalent of two years' drill in the Regular Army or at a recognized Military School *may* be excused from drill at the option of the Commandant. Students physically unable to drill in the ranks are assigned to the signal detachment.

Organization.

Cadets are organized into an infantry battalion of four companies, a band and a signal detachment. The officers are usually selected from the Junior and Senior Classes and the non-commissioned officers from the Sophomore Class.

The Uniform.

The uniform is of olive drab woolen cloth cut after the Army pattern. Each cadet must purchase his uniform from the firm having the contract. High-cut tan shoes with laces are part of the uniform, but they are not furnished by the contractor. *The wearing of second-hand uniform is prohibited.* Complete uniform costs about eighteen dollars.

Plan of Military Instruction.

1. *Theroetical Instruction.*

a. For officers and non-commissioned officers: Infantry Drill Regulations, Firing Regulations, Guard Duty, Field Service Regulations.

b. For all students: Lectures on the organization and administration of the U. S. Army, on the Military Policy and Military History of the U. S. and on the general principles of field service and minor tactics.

c. For students whose major is Military Art: Four years theoretical Military Science including the subjects of par. a. and, also, Military Hygiene, The Three Arms Combined, or the Tactical Use of Infantry, Cavalry and Field Artillery, Customs of the Service, Army Regulations, Hippology (College of Agriculture), Drawing (College of Civil Engineering), Field Engineering, Military Mapping, Upton's Military Policy of the U. S., Military Ancient History, Napoleon's First Campaign (Sargent), Napier's Peninsular War, Steele's American Campaigns, Military Law and Courts-Martial.

2. *Practical Instruction.*

a. For all cadets: Infantry Drill and Ceremonies, Field Service, Military Gymnastics, Practical Bayonet Fencing.

b. For officers and students whose major is the Military Art: Tactical Walks, Fencing with foil and broad-sword.

NOTE: A full supply of arms and ammunition is furnished by the War Department.

OUTLINE OF COURSE LEADING TO THE DEGREE B. S. IN MILITARY ART.

FRESHMAN YEAR.

FIRST SEMESTER.

	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits *
Mathematics 3	123	College Algebra	5		2.5
English 1	105	English Composition	3		1.5
Chemistry 1	97	General Inorganic, Non-Metals	3	4	2.5
German 1 or 2, or French 1	126	Elementary German or French	5 or 3		1.5
Military Science	278	Theoretical Military Science	2		1.0
Drill	278	Drill		3	.75
Physical Educ.	273	Gymnasium or Field Athletics		2	.5
					10.25

SECOND SEMESTER.

Mathematics 2	123	Trigonometry	5		2.5
English 1	105	English Composition	3		1.5
German 1 or 3, or French 1	126	Elementary German or French	5 or 3		1.5
Chemistry 2	97	General Inorganic, Metals	3	6	3.0
Military Science	278	Theoretical Military Science	3		1.5
Drill	278	Drill		3	.75
Physical Educ.	273	Gymnasium or Field Athletics		2	.5
					11.25

*A credit represents one hour recitation or two hours laboratory per week for thirty-six weeks.

SOPHOMORE YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Physics 1	129	Elementary Physics	3		1.5
Physics 2	130	Physical Measurements		4	1.0
History 5	114	United States History	3		1.5
French 2 or German 2 or 4	126	Elementary German or French	3		1.5
Drill	278	Drill		3	.75
Physiology 1	94	General Physiology	3		1.5
Military Science	278	Theoretical Military Science	3		1.5
Physical Educ.	273	Gymnasium or Field Athletics		2	.5
					9 75

Second Semester.

Physics 1	129	Elementary Physics	3		1.5
Physics 2	130	Physical Measurements		4	1.0
History 5	114	United States History	3		1.5
French 2 or German 2 or 4	126	Elementary German or French	3		1.5
Physiology 1	94	General Physiology	3		1.5
Military Science	278	Theoretical Military Science	3		1.5
Drill	278	Drill		3	.75
Physical Educ.	273	Gymnasium or Field Athletics		2	.5
					9.75

JUNIOR YEAR.

First Semester.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Philosophy 1	127	Logic	3		1.5
Geology 1 or Astronomy 1	110 / 125	Elements of Geology / General Astronomy	4		2.0
Spanish 1	127	Elementary Spanish	5		2.5
English 16	107	Romantic Movement	3		1.5
Military Science	278	Theoretical Military Science	2		1.0
					8.5

Second Semester.

Philosophy 2	127	History of Philosophy	3		1.5
Geology 3	111	Mineralogy Text and Laboratory		4	1.0
Hippology	279	Hippology	2		1.0
Botany 1	152	General Morphology	2	4	2.0
English 18	108	Victorian Essayists	2		1.0
Military Science	278	Theoretical Military Science	5		2.5
Military Science	278	Practical and Elective		3	.75
					9.75

SENIOR YEAR.

FIRST SEMESTER.

Course	See Page	Subject	Hrs. Rec.	Hrs. Lab.	Credits
Military Science	278	Theoretical Military Science	5		2.5
Military Science	278	Practical and Elective		3	.75
Law 1	254	Blackstone's Commentaries	3		1.5
History 4	114	Modern Europe	3		1.5
Political Science 1	115	American Government	3		1.5
Law 4	255	Contracts	2		1.0
Law 24	257	Conflict of Laws	2		1 0
					9.75

SECOND SEMESTER.

Military Science	278	Theoretical Military Science	5		2.5
Military Science	278	Practical and Elective		3	.75
History 4	114	Modern Europe	3		1.5
Political Science 1	115	American Government	3		1.5
Law 4	254	Contracts	2		1.0
International Law	257	International Law	2		1.0
					8.25

NOTE: 1. By permission of the Professor of Military Science a student whose major is Military Art may substitute some of the following courses for courses of equivalent weight not listed on page 80 as required for the B. S. Degree: Analytics, Calculus, Descriptive Geometry, Latin, Greek, and certain courses in English.

2. A student with a major study other than Military Art, may, with his Dean's permission, enter any of the courses in Theoretical Milita.y Science.

BATTLALION OF CADETS, 1914-15.

LIEUTENANT A. R. UNDERWOOD, 20th Infantry, Commandant.

Lieutenant W. B. Williams, Associate to Commandant.

Staff.

J. W. McDonald, *Major*.
J. T. Gelder, *Senior Captain and Adjutant*.
A. L. Johnson, *Captain and Quartermaster*.
J. F. Corn, *Sergeant Major*.
Fitzhugh Maclean, *Quartermaster Sergeant*.
J. S. Parker, *Color Sergeant*.
M. J. Crutcher, *Color Sergeant*.

"A" Company.

J. R. Marsh, *Captain.*
L. E. Payton, *Second Lieutenant.*
B. Mahoney, *First Sergeant.*

Sergeants.
A. W. Davis.
E. A. Penn.
C. Martin.
J. H. Evans.

Corporals.
L. A. Bradford.
W. E. Eyl.
E. P. Hatter.
C. Dugan.
C. W. Harney.
L. C. McClanahan.

"B" Company.

H. D. Graham, *Captain.*
J. H. Coleman, *First Lieutenant.*
G. E. Barber, *Second Lieutenant.*
M. D. Amburgy, *First Sergeant.*

Sergeants.
K. Fry.
H. Golden.
F. Y. Hutchinson.
C. Gaugh.
G. H. Hill.

Corporals.
G. R. Fishback.
R. B. Hayes.
F. L. Frazier.
J. B. Grubbs.
S. C. Johnson
G. L. Jackson.

"C" Company.

R. F. Albert, *Captain.*
C. S. Smith, *First Lieutenant.*
E. A. Blackburn, *Second Lieutenant.*
H. B. Combest, *First Sergeant.*

Sergeants.
E. R. Burnley.
L. McLain.
B. M. Peak.
V. Pfingstag.

Corporals.
S. C. Kinkcad.
J. E. McNamara.
R. Pearlman.
O. LaMaster.
G. B. Nance.
H. A. Pulliam.

"D" Company.

L. J. Heyman, *Captain.*
H. F. Cromwell, *First Lieutenant.*
C. S. Stephens, *Second Lieutenant.*
L. E. Littleton, *First Sergeaut.*

Sergeants.	*Corporals.*
L. E. Steinhauser.	W. P. Ringo.
S. L. Ware.	C. P. Wilkey.
H. Thomas.	R. B. Rankin.
J. P. Ricketts.	O. G. Schwant.
O. C. Walker.	O. Schaber.

Signal Corps.

J. H. Whitson, *Sergeant.*
C. L. Bowers, *Corporal.*

Band.

L. S. O'Bannon, *Chief Musician.*
C. E. Ruby, *Drum Major.*

THE SUMMER SCHOOL.

College of Arts and Science.

J. T. C. NOE, DIRECTOR.

The Summer school for teachers will begin Monday, June 14, 1915, and continue six weeks for recitations, six days in each week. The first three days of the seventh week, namely: July 26, 27 and 28th will be devoted to examinations. This plan enables us to give two-thirds of a semester's work and credit will be given on a regular basis for work done during the college year.

College courses will be offered in all the subjects taught in the High Schools of the State, with special attention given to the Pedagogy of the subjects. In addition to this work, which will be of a semi-professional nature, courses in the history and principles of education, and in the technique of teaching, and a course of special interest to principals and superintendents in administration and supervision will be offered by the department of education.

A feature of our Summer School is the lecture course open to the entire student body at 10 o'clock every day. Lectures by educators and men and women of note will be heard throughout the term.

No formal examinations will be required for entrance to the Summer School, but students who expect college credit must furnish entrance certificates from accredited schools, or pass entrance examinations, as required by the University for registration at the regular sessions.

All students will be charged a fee of $10.00 for the session.

Patterson Hall wlll be open for women. Room and board, $4.00 a week. Rooms may be had in Boys' Dormitories for a nominal fee.

Good board may be had in town for $3.50 per week.

The Carnegie Library of the University will be open during the summer. Students also have access to the City Library.

EDUCATION.

Professor Noe, Associate Professor Baker.

1. Principles of Education. This is a combined course of Psychology and Pedagogy. The following are some of the topics that will be

discussed: Education as a factor of organic evolution; heredity and education; from fundamental to accessory in education; conditions of individual development; recapitulation; correlation between mind and body; work, fatigue, and hygiene; the nature of the memory process; imitation in education; educational agencies; formal discipline. Text-book, lectures, readings, and reports. Five hours per week. (NOE)

2. **Technique in Teaching.** This course is a discussion of value, discipline and method The chief high school subjects will receive attention. Illustrations of presentation will be given through the actual teaching of several high school subjects during the session. (NOE)

3. **History of Education.** This course will cover the following systems of education, stressing particularly their contributions to modern education. Hebrew, Greek, Roman and Christian. Six recitations a week, lectures and discussions. This course carries one credit. (BAKER)

4. **History of Educatlon.** This course will cover the period from the close of the middle ages to the present time. Special emphasis will be given to the educational theorists of the 19th century and their relation to school practice. Six recitations per week, lectures and discussions. This course carries one credit. (BAKER)

5. **School Administration and Supervision.** This course will include:

A. Consideration of the following problems connected with administration of State, county and city school systems:

1. Legal status — a comparative study of Kentucky and other states.
2. Units of control—special reference to county unit plan in Kentucky.
3. Types of schools.
4. Text book legislation.
5. Boards of Education—Executive and legislative functions.
6. The high school as a business enterprise with emphasis on fiscal aspects, preparation of budget, etc.
7. Preparation and selection of teachers.
8. School attendance—studies in retardation, acceleration, and elimination.
9. Critical study of curricula with special reference to the Six-Six System.
10. Critical study of City Superintendent's Reports.
11. A study of the organization of systems of school records.

12. A study in the presentation of school information to the public through effective reports.

B. Supervision: This course will include consideration of the following:

1. The educational expert—what the position involves.
2. Rural and village school supervision.
3. Supervision of small cities.
4. Purposes and aims of supervising agencies.
5. The superintendent and training of teachers in service.
6. Function of supervisors and selection of teachers.
7. Controlling principles. (BAKER)

MATHEMATICS.

Professor Boyd, Professor Davis.

1. **Beginning Algebra.** A course designed for those who have never studied the subject, and also for those who have conditions in it.

2. **Advanced Algebra.** A second course which will be fitted to the needs of the class desiring it. Pedagogical questions will receive attention.

3. **Plane Geometry.** This course will complete as much of the Plane Geometry as possible, and will be based on a new book illustrating the latest ideas in Geometry.

4. **Solid Geometry.** A thorough course open to Public School teachers and to those desiring to increase their credits for college entrance and to High School students who have been conditioned in the subjects.

5. **College Mathematics.** Courses in college subjects will be given in accordance with the demands for them.

MODERN LANGUAGES.

Professor Zembrod, Professor Melcher.

The courses offered in German will be arranged to suit the wants of three classes of students, *i. e.* of beginners; of those having a grammatical knowledge of the language, and of those who desire advanced work. Classes will be adapted particularly to the needs of teachers.

GERMAN.

1. **First Course.** Bacon's German Grammar.

2. **Second Course.** Rapid Grammar review with reading of intermediate texts and composition based on texts read.

3. **Third Course.** German novel; composition and conversation.

4. **Fourth Course.** German drama.

FRENCH.

1. **Beginning French.** Fraser and Squair's French Grammar.

SPANISH.

1. **Elementary Spanish.** Hill and Ford's Grammar.

LATIN.

Professor Jones.

1. **Bennett's First Year Latin.** The entire text will be covered. Special attention will be given to the subjective, conditional sentences and to syntax in general.

2. **Caesar.** Easy fables and selections from Cæsar, especially the fifth, sixth and seventh books. The last book of Cæsar describes the customs of the Germans, Britons and Gauls, and makes interesting reading. Due attention will be given to construction.

3. **Cicero.** Two orations from Cicero and selections from his letters. This course is designed to enlarge the student's knowledge of Cicero. The orations selected will be some two or three not usually read in the schools.

4. **Virgil.** First, fourth and sixth books of Virgil. Attention will be given to scanning; mythology, etc. The poem will be read as a great work of literature.

PHYSICS.

Professor Webb.

Elementary Physics. A course in the elements of Physics, designed to prepare to teach High School Physics. Lectures and recitations. Four hours per week, laboratory four hours per week. Gage's Elements of Physics, revised by Dr. Goodspeed, will be used as a basis of the lecture and recitations. Some attention will be given to the selection of material for High School courses in Physics and to methods of instruction. The laboratory work will consist of selected experiments from a list of more than fifty, suitable for High School laboratory courses.

HOME ECONOMICS.

Associate Professor Buckman.

1. **Handsewing.** This is a course in fundamental handsewing, applied on models and garments. It is taught with an effort to meet the need of the rural and grade teacher of handsewing. 1 credit. Lectures and laboratory.

2. **Elementary Clothing.** This is a laboratory course which deals with the drafting of patterns and the making of undergarments, wash dresses and waists. Handsewing, prerequisite or correlative. Materials for garments subject to approval of instructor provided by students. .7½ credit. Laboratory.

3. **Textiles.** A text book cousse dealing with the subject of Textiles in its various phases. Manufacture, adulteration, hygiene, laundry economy, etc. Correlative with Elementary Clothing. .5 credit. Lectures.

4. **Teaching of Textiles and Clothing.** This course is designed to meet the needs of teachers of Textiles and Clothing. Lesson plans, bibliography, courses of study, method of presentation, etc., will be discussed and reading assigned. .5 credit. Lectures.

N. B. If the demand justifies it a course in Elementary Cooking will be offered in lieu of one of the other courses.

HISTORY.

Assistant Professor Butt.

1 **English History.** From the Tudor period to the present time. Emphasis will be laid on constitutional development and colonial expansion.

2. **American Government and Politics.** The course will have to do chiefly with the federal constitution and its historical setting; political parties; and State government.

3. **Political Economy.** The nucleus of the following subjects will be given: Trusts and Monopolies; Protective Tariff; Public Ownership; Property and Income Taxes.

ENGLISH.

Professor Dantzler.

1. **English Composition.** This course is designed for teachers who wish to take advanced work in the four forms of composition. There will be specific collateral reading and practice in theme writing with required modes of development.

2. **Nineteenth Century Prose.** Emerson, Carlyle, Ruskin. Representative essays of these authors will be studied in their relation to the ethical and social ideas of the times. This course is intended to supplement the course in English Composition. Students should bring with them the essays of these authors. Any edition may be used.

3. **Nineteenth Century Poetry.** Wordsworth and Shelley. This course will include a rapid survey of the beginnings of Romanticism, followed by an exhaustive study of Wordsworth and Shelley. Lectures, and essays on assigned topics. Students should bring with them copies of Wordsworth and Shelley, preferably complete editions.

4. **Shakespeare.** In this course, a study will be made of Shakespeare's development as a dramatist. A number of plays will be studied in detail from the standpoint of dramatic structure and characterization. Attention will also be given to the methods of treating Shakespeare in the High School. Students are advised to bring a copy of Shakespeare with them. The Oxford edition is recommended. Five hours per week.

AGRICULTURE.

Professor Roberts, Professor Kinney.

This course will consist of a series of lectures and exercises on soils and crops intended to provide material that may be used by High School teachers who may desire to introduce some agricultural instruction in their courses of study.

College of Civil Engineering.

WALTER E. ROWE, DEAN.

COURSE IN DETAIL.

For information about fee see the Dean.

1. **Structural Drafting.** The work in Structural Drafting consists of fifteen plates of structural detail and covers nearly every phase of structural detail met in actual practice.

2. Mechanical Drawing. Free-hand and mechanical lettering; geometrical problems; detail and dimensions drawing; pen topography.

3. Plane Surveying. This course consists of an elementary course in land surveying methods and in the use of surveying instruments—recitations, lectures and field work.

4. Graphic Statics. Principles and methods; roof trusses; bridge trusses; locomotive wheel loads; trusses with broken chords.

5. Railway Engineering. Simple and compound curves; changing radius; shifting curve; turnouts from straight track; turnouts from curved track; railroad location; earthwork computation.

6. Roof and Bridge Design. Theory and design of roofs, bridges, standpipes, towers and other problems of structural interest.

7. Stone Cutting. Plane-sided surfaces; structures containing developable surfaces; structures containing warped surfaces; structures containing double-curved surfaces.

8. Highway Engineering. In addition to the course of study as outlined above there will be given a course in Plane Surveying, Leveling, Mapping and Highway Location and Construction. This course will be given to all County Surveyors and Road Supervisors free of charge.

College of Mechanical and Electrical Engineering.

F. PAUL ANDERSON, DEAN.

The buildings and equipment ordinarily used for the regular college work are available for use during the Summer Session. For information about the fee, see the Dean.

DEPARTMENTS OF WORK.

1. STEAM AND GAS ENGINEERING.
2. ELECTRICAL ENGINEERING.
3. MACHINE DESIGN AND MECHANICS.
4. MECHANICAL DRAWING.
5. SHOP WORK.

STEAM AND GAS ENGINEERING.

1. Thermodynamics. A theoretical study of the underlying principles of heat engines, involving the application of higher mathematics.

Thorough investigation of modern analysis of the fundamental laws of thermodynamics, Carnot's and Rankin's cycles as applied to vapor engines, and the relations between entropy and temperature. The underlying principles of gas and gasoline engine operation will also be considered. This course will involve a knowledge of college mathematics.

2. Steam Boilers. This is a combined practical and theoretieal study of modern steam boiler practice and will involve both recitation and drawing room work. This course may be made as elementary as conditions require.

3. Valve Gears. Recitations and lectures on modern practice in valve gear construction and theory, and some problems to be solved in the drawing room.

4. Internal Combustion Engines and Gas Producers. A series of lectures and recitations on standard practice, and the development of modern types. May be of such a character as to involve no previous mathematical training.

5. Steam and Gas Laboratory. A wide range of experimental work is available. The character of the work done will naturally depend upon previous theoretical training and practical experience. Abundant opportunity is afforded to investigate natural gas and gasoline engines, and the equipment commonly found in connection with modern steam plants.

ELECTRICAL ENGINEERING.

1. Alternating Current Machinery. Two courses are offered, one involving higher mathmematics to a considerable extent, and the other presenting the characteristic modern a. c. apparatus in a descriptive manner.

2. Alternating Current Design. A series of design problems will be provided to suit the conditions.

3. Alternating Current Laboratory. Experiments as may be necessary, covering the fundamental principles of alternating current machinery and apparatus. A varied assortment of measuring instruments is available and a comprehensive series of experiments may be performed with the laboratory equipment.

4. Telephony. A course of combined recitation and laboratory work covering the principles of telephony.

5. Direct Current Machinery. Class room instruction involving description of modern types of d. c. machinery and apparatus.

6. Elementary Electrical Engineering. Theoretical study of the fundamental principles involved in d. c. instruments and apparatus chiefly, although the measurements of capacity, hysteresis, and eddy currents are discussed. Considerable time is devoted to primary and secondary batteries, galvanometers, and laboratory apparatus.

7. Direct Current Design. A series of problems will be provided covering the various phases of standard practice.

8. Direct Current Laboratory. A wide variety of direct current experiments may be easily arranged to suit individual cases.

9. Illumination and Photometry. A course of combined lecture and laboratory work covering the principles of modern illumination.

MACHINE DESIGN AND MECHANICS.

1. Strength of Materials. Class room instruction covering the ordinary materials used in engineering construction.

2. Analytical Mechanics. This course involves such instruction as is usually given in college work, with a text-book of the character of I. P. Church's.

3. Kinematics. Class room instruction, in connection with problems, to be worked out on the drawing board, covering the ordinary methods of transmitting motion mechanically.

4. Machine Design. A series of problems in the design of simple machines, or parts of machines, with recitations as may be necessary.

5. Laboratory Work in Testing Materials. A comprehensive series of tests of the materials commonly used in engineering construction.

DRAWING.

1. Mechanical Drawing. This work comprises free-hand lettering, free-hand sketches, drawing from copies and models, exercises in tinting and shading, tracing and blue-printing.

2. Elementary Design. This course covers the drawing of parts of machines and complete machines to scale, and the original design of machine details.

3. Theory and Practice of Photography. Lectures on the chemistry and optics of photography especially prepared with reference to the latest practice in photographic art. The work also includes laboratory practice in photography which gives the student a good practical working knowledge of picture taking and picture making.

4. Descriptive Geometry. This work includes first the discussion of descriptive geometry as a branch of pure mathematics, later comes a consideration of the application of descriptive geometry principlesa s an aid to engineering drawing. The lectures and recitations are supplemented by work in the drawing room.

5. Normal Course in Drawing. This course is intended especially for manual training teachers and in addition to the work given under drawing.

SHOP WORK.

1. Bench Work in Wood. This includes exercises in planing, sawing, rabbeting, plowing, notching, splicing, mortising, tenoning, dovetailing, framing, panneling, and the general use of carpenters' tools.

2. Wood-turning. This work includes exercises which involve all the various principles of lathe-work in wood.

3. Pattern Making. This is a continuation of courses one and two and is intended to give experience in the construction of patterns for use in making iron and brass castings.

4. Normal Course in Wood Working. This course is designed especially for manual training teachers who wish to become acquainted with methods of teaching wood working.

5. Foundry Work. This includes the various operations of moulding, core-making and the melting of iron, brass and other commercial alloys.

6. Normal Course in Foundry Work. This course is designed primarily for teachers and is arranged to acquaint them with the best methods of giving instruction in foundry work.

7. Forge Shop Work. This course includes a large number of exercises intended to give the student experience in all the fundamental operations of steel and iron forging.

8. Normal Course in Forge Shop Work. This course is similar to course No. 7 except that it is arranged primarily for teachers and is intended to acquaint those taking it with the approved methods of giving instruction in this subject.

9. Machine Shop Work. This includes exercises in vise work in metal such as chipping and filing, and general machine work, including screw cutting, drilling, planing and milling of iron, brass and steel.

10. Normal Course in Machine Shop Work. This course is arranged especially for teachers and in addition to the work covered by course

No. 9, it includes instruction as to the most approved methods of teaching machine shop work.

College of Law.

W. T. LAFFERTY, DEAN.

In connection with the summer courses in other departments of State University, the College of Law will offer a special course in law, beginning June 14, 1915, and continuing eight weeks. These courses will be given on many of the subjects set out in the regular courses, and are offered for the benefit of those who have not completed the work of the previous year, and wish to continue the law course to its completion; for those who are preparing for admission to the bar, but have had no training in a law school; for practicing lawyers who wish to review the law to familiarize themselves with the theory or to prepare for advanced standing in pursuing the law course to graduation in this University.

Practice court will be conducted each day in which instruction will be given in the procedure in all matters, both civil and criminal.

Work successfully completed during the summer term will be credited as if done during the term of a regular session.

The Dean of the College of Law will conduct the Summer School, assisted by members of the Law faculty; and during the term arrangements will be made for special lectures.

For tuition fees communicate with the Dean.

Part IV.

DEGREES AND HONORS.

1914-15.

COMMENCEMENT EXERCISES.

THURSDAY, JUNE 4, 1914.

MUSIC.

INVOCATION.

MUSIC.

ORATION: *The Value of a Vision.*

John Howard Payne, A.B., Class Representative.

MUSIC.

ADDRESS:

REV. EDWARD L. POWELL, D.D.
Louisville.

MUSIC.

CONFERRING OF DEGREES AND DELIVERY OF DIPLOMAS:

Henry S. Barker, LL.D., President of the University.

BENEDICTION.

MUSIC.

DEGREES.

Conferred on Commencement Day, 1914.

COLLEGE OF ARTS AND SCIENCE.

Bachelor of Arts in English.

Charles Elmo Blevins	Owingsville
Katherine McMurchy Logan	Lexington
Reuben Thornton Taylor	LaGrange
Lydia Elizabeth Westcott	Lexington

Bachelor of Arts in Latin.

Stonewall Jackson	Arlington
Robert Allen Norris	Philpot
Myna May Peck	Lowes
Edwin Thomas Proctor	Leitchfield
Stephen Lemont Pannell	Greenville

Bachelor of Arts in Modern Languages.

Lucius Madison Hammonds	Mayfield
Sallie Elizabeth Pence	Lexington
Elsie Grace Shelton	Kingman, Kansas
Anne Elizabeth Waddy	Lexington

Bachelor of Arts in History.

Earle Cassady	Inez
Ruth McChesney	Paducah
McHenry Holbrook	Hartford
Julian Larabie Pinkerton	Versailes

Bachelor of Arts in Education.

Herman Lee Donovan	Paducah
Pauline Hank	Paducah
Otto Jefferson Jones	Sedalia
Francis Folsom McGuire	Mt. Vernon
John Howard Payne	Cold Spring

Joseph Roemer	Bowling Green
William Thomas Woodson	Flat Lick

Bachelor of Arts in Mathematics.

Agnes Neal Gordon	Lexington

Bachelor of Arts.

Mary Frances Huff	Roanoke, Virginia
Gertrude Tartar	Somerset
Harry Netherland Woodson	Flat Lick
Walter Franklin Wright	Manchester

Bachelor of Science in Education.

Grace Elizabeth Baker	Lexington
Sue Dorothy Matthews	Lexington
Idie Lee Turner	Lexington
Caroline Taylor Watkins	Lexington

Bachelor of Science in Industrial Chemistry.

Abe Sidney Behrman	Covington
Robert Cornelius Dabney	Hopkinsville
Edward Friend Danforth	Hopkinsville
Harry Benjamin Dobrowsky	Richmond
Coleman Hewlett	Livia
Carl Emil Lauer	Louisville
Henry Neal Marsh	Maysville
Robert Pfanstiel	Morning View
George Thomas VanArsdale	Louisville

Bachelor of Science in Chemistry.

Edgar H. Nollau	St. Louis, Mo.

Bachelor of Science in Mathematics.

Clarence Wilder Denham	Williamsburg
Mary Kinkead Venable	Pewee Valley

Bachelor of Science.

Leo Joseph Sandmann	Louisville

COLLEGE OF AGRICULTURE.

Bachelor of Science in Agriculture.

Virgil Alexander Babbage	Cloverport
John Lloyd Brown	New Providence, Iowa
Paul Dennis Brown	Somerset
Arthur Louis Brueckner	Bellevue
Hal Farnsworth Bryant	Lexington
Jesse Roy Christie	Manchester, N. H.
Edward Hubert Faulkner	Lot
Hubbard Kavanaugh Gayle	Frankfort
John Albert Hatter	Franklin
Gilbert Coleman Richardson	Kenton.
Seneca Claiborn Routt	Gee
Henry Wolf Schoening	Louisville
Graham Allen Smith	Henderson
William Cameron Smith	Henderson
John Tee Taylor	Cynthiana
Joseph Raymond Wall	Cayce
Adolph E. Waller	Louisville
James W. Whitehouse	Taylorsville

COLLEGE OF CIVIL ENGINEERING.

Bachelor of Civil Engineering.

William Cornelius Almstedt	Louisville
Paul Howard Croft	Fulton
Levi O. Coleman	Paradise
Carroll Allen Duncan	Anchorage
Robert L. Gregory	Harlan
Harry Daniel Hundley	Owensboro
Thomas Leonard Pearre	Clinton
Hovey Duncan Palmore	Persimon
Perry Adolphus Rowe	Lexington
Raymond Earl Steffy	Bicknell, Ind.
Clarence Horace Schwartz	Wickliffe

COLLEGE OF MECHANICAL AND ELECTRICAL ENGINEERING.

Bachelor of Mechanical Engineering.

Arthur Ray Bennett	Narrows
Edward Closson Tomlinson Blaker	Wooster, Ohio
William Stanley Carrithers	Taylorsville
Robert Boyd Cottrell	Owensboro
William Caldwell Cross	Louisville
Donald Magoffin Gaither	Harrodsburg
George William Gayle	Frankfort
Cecil Chenault Harp	Lexington
Ellis Brown Hayden	Paris
Henry Berkley Hedges	Lexington
Thomas Daugherty Howard	Lexington
Edgar Engman Johnson	Lexington
George Edelen Kelly	Lebanon
Herbert Ray Masters	Louisville
Daniel Tennyson Morgan	Elizabethtown
Herschel Reginald Shelton	Clinton
Henry Glover Strong	Louisville
Roger Thomas Thornton	Lexington
Robert Presley Townsend	Owensboro
Henry Tyler Watts	Louisville

COLLEGE OF MINES AND METALLURGY.

Bachelor of Mining Engineering.

James William Atkins	Lexington
Thomas Robinson	Middlesborough

Bachelor of Metallurgical Engineering.

Henry John Jakobe	Covington
Oliver Wolcott Smith, Jr	Covington

COLLEGE OF LAW.

Bachelor of Laws.

Arthur Titus Bryson	South Portsmouth
George Addison Chrisman	Louisville
William Wayne Chambers	Gatliff
Guy Leslie Dickinson	Barbourville

Allen Wyant Gullion	U. S. Army
Leslie Guyn	Lexington
Taylor Nathan House	Richmond
Elmer Dishman Hays	Winchester
Wallace Duncan Hamilton	Greenville
Henry Townes Hardin	Sebree
Charles Walter Hoskins	Hyden
Guy Alexander Huguelet	Charlotte, N. C.
George Enoch Jones	Sturgis
William Henry Jones	Hazel
Clayborne Xenophon Johnson	Tallega
Ted Benjamin Kelley	Lexington
Henry Clay Kimbrough, Jr.	Lexington
Arthur Leo King	Robards
William Marion Magruder	Lexington
Harry Benjamin Miller	Lexington
Jesse Isidor Miller	Lexington
Frank Rice Parks	Lexington
Roscoe C. Preston	Inez
William J. Sanford, Jr	Covington
Basil Duke Sartin	Willow Shade
Henry L. Spencer	Lexington
Duran Keel Tackett	Virgie
Frank Hereford Tomkies	Lexington
Charles Chester Wilson	Canmer
Ward C. Yeager	Warsaw

HONOR GRADUATES.

College of Arts and Science.

Clarence Wilder Denham.
Henry Neal Marsh.
Edgar H. Nollau.
Edwin Thomas Proctor.
Joseph Roemer.

College of Agriculture.

Hubbard Kavanaugh Gayle.
Paul Dennis Brown.

College of Civil Engineering.

William Cornelius Almstedt.
Clarence Horace Schwartz.
Robert L. Gregory.

College of Mechanical and Electrical Engineering.

Roger Thomas Thornton.
Henry Glover Strong.

College of Mines and Metallurgy.

Oliver Wolcott Smith, Jr.

THE GRADUATE SCHOOL.

Master of Arts.

Ella Kiziah Porter, Lexington
Thesis: Tudor and Stuart Boy Actors in the Evolution of the Drama.
William Claude Shultz, Narrows
Thesis: A Comparative Study of the Morte d'Arthur and Tennyson's Idylls of the King.

Master of Science.

Dolly Taylor Battaile, Lexington
Thesis; Relief Perspective.
Inis Gillis, Lexington
Thesis: The Period of Storm and Stress According to H. Am Rhyn's Kulturgeschichte Deutschlands.
William Henry McAdams, Lexington
Thesis: A Contribution to the Analytical Chemistry of Vanadium.
James Spencer McHargue, Lexington
Thesis: The Relation of Manganese to Agriculture.
Thomas Foreman Ott, Lexington
Thesis: Some New Vegetable Oils.
Benjamin Dunbar Wilson, Lexington
Thesis: A Preliminary Report on the Action of Weak Solvents on Insoluble Silicates Containing Potassium, Occurring in Soils.

Civil Engineer.

Leon Metcalf Allison, Winston Salem, North Carolina
Thesis: Reinforced Concrete Construction.

Walter Andrew Harn, Akron, Ohio
Thesis: Leakage in Cast Iron Water Pipes.

Orville Heber Taylor, Fort Dodge, Iowa
Thesis: The Design of a Railway Terminal System for the Handling of Freight and Passenger Traffic in the City of Sioux City, Iowa.

Daniel Voiers Terrell, Lexington
Thesis: Standard Plans and Specifications as Applied to Municipal and Highway Engineering.

Mechanical Engineer.

Arthur Board Haswell, Ensley, Ala.
Thesis: A Study of a 4x4 Billet Mill.

Arza Lytle Wilhoite, Lexington
Thesis: A Determination of the Cost of Electric Power at the Ferguson Shops of the C. N. O. and T. P. Railway.

Electrical Engineer.

George Taylor Bogard, Richmond
Thesis: Reconstruction of the Power Plant of the Richmond Electric and Power Company.

Charles Elwood Daniel, New York City
Thesis: Factory Testing of Dynamo Electrical Machinery.

Hiter H. Lowry, Chicago, Ill.
Thesis: A Study of Toll Switchboard Equipment in Large Telephone Centers.

Mining Engineer.

Robert Ryland Atkins, Cannel City
Thesis: The Cannel City Oil Field; Methods Followed in the Study of Its Structure and in Its Development, with a Map Exhibiting the Underground Contours of the Oil-Bearing Strata.

Kessack Duke White, Urbana, Ill.
Thesis: The Coal Resources of Vermilion County, Illinois, and An Explanation of the Occurrence of 'Rolls' in the Coal Beds, Based on Studies in the Field.

Master of Laws.

August Adolph Bablitz, Lexington
Thesis: Labor Unions and Their Relation to the Law.

HONORARY DEGREES.

Doctor of Laws.

Andrew McConnell January Cochran	Maysville
Charles Evans	Edmond, Oklahoma
Barksdale Hamlett	Frankfort
George Herbert Harries	Washington, D.C.
Edward Lindsay Powell	Louisville

Mechanical Engineer.

George Burgess Carey	Lexington

SCHOLARSHIPS, PRIZES AND HONORS.

Southern Railway Scholarship.

Lecoq Rerc Nelson, Lexington, Ky.

Tau Beta Pi Scholarship.

George L. Cherry, Bowling Green, Ky.

Japanese Society Prize.

This prize was not awarded for the year 1913-14.

Bennett Prize.

This prize was not awarded for the year 1913-14.

Barker Trophy.

Won by the Union Literary Society.

Barker Prize for the Horace Mann Society.

Won by Llewellyn D. Roberts, Springfield, Ky.; Arthur E. Wegert, Louisville, Ky.

Crum Declamation Prize.

Won by Grover C. Wilson, Paint Lick, Ky.

Patterson Oratorical Prize.

Won by Richard A. Foster, Marion, Ky.

Union Oratorical Prize.

Won by Herman L. Donovan, Paducah, Ky.

Union Declamatory Prize.

Won by Bart N. Peak, LaGrange, Ky.

The American Law Book Company Prize.

Won by Charles C. Wilson, Canmer, Ky.

Callaghan & Company Prize.

Won by Major W. McBrayer, Lawrenceburg, Ky.

John B. Atkinson Prize.

This prize was not awarded for the year 1913-14.

Commissioner of Agriculture Prizes.

This prize was not awarded for the year 1913-14.

The American Saddle Horse Breeders Association Trophy.

Won by William J. Harris, Nolau, W. Va.

Freshman Individual Drill Prize.

Won by Kenneth C. Frye, Waddy, Ky.

Sophomore Individual Drill Prize.

Won by William Whitlock Clarke, Jr., Owensboro, Ky.

Prize Company in Competitive Drill.

B Company Battalion of Cadets.

Captain J. T. Gelder
First Lieut. G. C. Rogers
First Sergeant W. T. Radford
Sergeant H. F. Cromwell
Sergeant E. J. Eimer
Sergeant R. H. Gilbert
Sergeant C. W. Owen
Sergeant M. E. Pendleton
Sergeant C. S. Jmith
Corporal I. B. Browning
Corporal D. D. Elliot
Corporal J. W. Jones
Corporal C. F. Kumli
Corporal F. M. Powell
Corporal S. Stokes
Corporal J. Wolf
Private H. D. Abel
Private W. M. Adams
Private W. F. Allen
Private L. M. Amburgey
Private M. D. Amburgey
Private W. H. Ashby
Private G. C. Baker
Private M. J. Clarke
Private J. F. Corn
Private M. J. Crutcher
Private J. H. Evans
Private W. C. Eyl
Private J. S. Fish
Private R. Y. Fishback
Private K. Frye
Private C. R. Gaugh
Private H. W. Golden
Private T. D. Grubbs
Private C. M. Harbinson
Private C. W. Harney
Private E. P. Hatter
Private R. B. Hayes
Private J. M. Hedges
Private W. S. Hieronymus
Private G. H. Hill
Private J. A. Hodges
Private J. T. S. Holt
Private H. P. Horine
Private F. Y. Hutchinson
Private G. L. Jackson

Private F. Barnes	Private S. C. Johnson
Private L. A. Bradford	Private C. S. Kinkead
Private E. M. Chapman	Private R. C. Scott

Representative in the Kentucky Intercollegiate Oratorical Association.

John Howard Payne, Cold Spring, Kentucky.

Representative in the Vanderbilt-Kentucky Debate.

C. P. Nicholson	Tinker, Ky.
B. D, Sartin	Willow Shade, Ky.

Representatives in the Georgetown-Kentucky Debate.

Joseph Roemer,	Bowling Green, Ky.
Junius Wolf,	Lexington, Ky.
John Howard Payne,	Cold Spring, Ky.

Class Day, 1914.

President's Address	Stonewall Jackson
Roll Call	Mary K. Venable
Class Poem	C. E. Blevins
Class History	Idie Lee Turner
Class Grumbler	E. T. Blaker
Giftorian	W. C. Cross

Arbor Day, 1914.

President's Address	Stonewall Jackson
Class Orator	Henry T. Spencer
Class Prophet	Folsom McGuire
Junior Class Representative	J. W. Wesson

Kentucky Interscholastic Association Tournament.

Class A.

Won by Louisville Male High School.

Class B.

Won by Stanford High School.

Individual Championship.

Won by S. Webber, Louisville Male High School.

Part V.

THE ALUMNI ASSOCIATION.

THE ALUMNI ASSOCIATION.

The Alumni Association is an organization composed of alumni and former students of the University. It has been organized for the purpose of extending the influence of the University and keeping alive the bonds of friendship and social fellowship among its members.

The Association has taken a keen interest in the growth and development of the University for many years, but not until recently has it taken an active interest in the affairs of the University. As evidence of this, it secured through the last legislature an act giving the alumni representation on the Board of Trustees of the University.

Membership of the organization is widely scattered and Alumni Clubs have been formed in many of the larger cities throughout the country. Plans are also being formulated with a view to establishing clubs in the various counties of the Commonwealth. Annual business meetings and class reunions are held during Commencement week of each year at the University. Club meetings are held at the will of the various clubs.

OFFICERS OF THE GENERAL ALUMNI ASSOCIATION.

President—W. L. Bronaugh, 23 Pine Avenue, La Grange, Ill.
Vice-President—M. E. Johnston, Lexington, Ky.
Secretary-Treasurer—J. D. Turner, Lexington, Ky.

Executive Committee.

W. E. Freeman, *Chairman.*
Frank Battaile.
W. T. Campbell.
J. W. McFarland.
L B. Allen.
Lucy K. Hutchcraft.

ALUMNI CLUBS AND OFFICERS.

Birmingham, Alabama.

J. Miles Sprague, '07, President, Ensley, Ala.
H. J. Wurtele, Vice-President, Ensley, Ala.
A. B. Haswell, '13, Sec'y-Treas., Ensley, Ala.

Chicago, Illinois.

H. H. Lowry, '09, President, 1839 S. Lawndale Ave., Chicago, Illinois.
J. B. Sanders, '11 Vice-Pres. 108 S. Stone Ave., LaGrange, Ill.
F. H. Graham, '08, Sec'y-Treas., 204 N. Mason Ave., Chicago, Ill.

Cincinnati, Ohio.

Paul S. Ward, '98, Presldent, 1646 Cedar Ave., Cincinnati, Ohio.
W. P. Sayers, Vice-Pres., 219 W. Fourth St., Cincinnati, Ohio.
J. J. Thompson, '03, Secy-Treas., 201 W. Pearl St., Cincinnati, O.

Lexington, Kentucky.

M. E. Johnston, '00, President, 230 South Limestone St., Lexington, Kentucky.
S. B. Marks, '99, Vice-Pres., 243 Rodes Ave., Lexington, Ky.
Margaret McLaughlin, '03, Secretary, 226 E. Maxwell Street, Lexington, Ky.
Mary L. Didlake, '95, Treasurer, 418 E. Main St., Lexington, Ky.

Louisville, Kentucky.

E. C. Wurtele, '03, President, 903-4 Inter-Southern Building, Louisville, Ky.
Lucy Higgins, '03, Vice-Pres., 426 Walnut St., Louisville, Ky.
Joe Wilson, '00, Secretary, A. J. Anderson & Co., Louisville, Ky.
W. E. Gary, '04, Treasurer, Louisville, Ky.

Nashville, Tennessee.

J. M. Foster, '11, President, 1909 Broad St., Nashville, Tenn.
Eugene Gilliland, '04, Vice-Pres., 308 Arrington St., Nasville, Tennessee.
John J. Tigert, '09, Sec'y-Treas., 1710 Broad St., Nashville, Tennessee.

New York City, New York.

Perry West, '01, President, 6 Ninth St., Newark, N. J.
A. Akin, '05, Vice-Pres., 463 West St., New York.
L. L, Lewis, '07, Sec'y-Treas., 39 Cortlandt St., New York.

Philadelphia, Pennsylvania.

Frank Daugherty, '01, President, 2109 Chestnut St., Philadelphia.
K. F. Adamson, '07 Vice-Pres., University of Pa., Philadelphia.
Ben H. Logan, '10, Sec'y-Treas., 1530 S. 55th St., Philadelphia.

Pittsburgh, Pennsylvania.

H. S. Fry, '04, President, Box 247, Rochester, Pa.
D. C. Estill, '07, Sec'y-Treas., 1312 Oliver Building, Pittsburgh, Pennsylvania.

Schenectady, New York.

S. C. Ebbert, '11, President, 24 Glenwood Blvd., Schenectady, New York.
C. M. Roswell, '08, Secretary, 724 Bandywine Ave., Schenectady, New York.

South Africa.

H. W. Taylor, '06, President, Rusenburg, Transvaal, S. Africa.
J. du P. Oosthuizen, '12, Sec'y-Treas. Vredefort, O. F. S., South Africa.

St. Louis, Missouri.

A. C. Ball, '11, President, 721 Chemical Building, St. Louis, Mo.

Washington, District of Columbia.

P. M. Riefkin, '06, President, Department of Interior, Bureau of Mines, Washington, D. C.
W. G. Campbell, '02, Vice-Pres., Department of Agriculture, Bureau of Chemistry, Washington, D. C.
F. H. Tucker, '09, Secretary, Chemist, Bureau of Standards, Washington, D. C.

Part VI.

REGISTER OF STUDENTS, ETC.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

**Ammerman, John Roger (B.M.E., 1907) — Chicago, Ill.
Mechanical Engineering.

Arnold, Samuel Allen (A.B., Asbury College, 1910) — Wilmore
Latin.

**Barrows, William Dante (B.C.E., 1912) — St. Thomas, Ark.
Civil Engineering.

Bitner, Ralph Emerson (B.S., Pa. State Coll., 1914) — Lexington
Physics.

**Brown, Paul Dennis (B.S.Agr., 1914) — Henderson
Bacteriology.

Bryant, Hal Farnsworth (B.S.Agr., 1914) — Lexington
Principles of Breeding.

**Caplinger, William J. (B.S., Lebanon) — Maysville
Education, German.

**Caywood, Frank Finley (B.C.E., 1910) — Harlan
Civil Engineering.

**Cornelison, Hubert LeGrand (B.M.E., 1908) — Jacksonville, Fla.
Electrical Engineering.

Dabney, Robert Cornelius (B.S., 1913) — Lexington
Chemistry.

**Earle, Thomas Evans (B.C.E., 1912) — Kankakee, Ill.
Civil Engineering.

Faulkner, William Ernest (A.B., Union, 1907; L.L.B., Geo. Washington, 1910) — Barbourville
Law.

**Fleming, Ruby Ringo (A.B., 1910) — Hickman
German, Latin.

**Gayle, Hubbard Kavanaugh (B.S.Agr., 1914) — Franklin
Bacteriology.

**Giltner, James Bristow (B.E.M., 1912) — Dante, Va.
Mining Engineering.

**Non-resident.

Glass, Rhoda Virginia (A.B., 1909) Lexington
English.

**Gullion, Allen Wyant (A.B., Centre College, 1901) Fort Bliss, Tex.
English.

**Haff, Robert Schuyler (B.C.E., 1909) Hannibal, Mo.
Civil Engineering.

**Hamilton, Zechariah Pierce (A.B., Mercer Univ., 1907) Albany
Education.

**Hardesty, Llewellyn Coons (B.M.E., 1912) Schnectady, N. Y.
Electrical Engineering.

Hart, Derrill Wason (A.B., 1912) Pisgah
English.

**Hatfield, Ulysses Grant (B.Ped., 1902) Russell Springs
Education.

**Hatter, John Albert (B.S.Agr., 1914) Ilagan, P. I.
Bacteriology.

Hollcroft, Temple Rice (B.S., Hanover College, 1912; A.B., 1914) Lexington
Mathematics, Physics.

Hopper, Walter O. (A.B., Central, 1904) Mt. Sterling
Education.

Jewell, Frances (A.B., Vassar College) Lexington
English.

**Johns, Charles Ashley (B.M.E., 1909) Chicago, Ill.
Mechanical Engineering.

**Johnson, Hampton Wallace (B.M.E., 1904) Baltimore, Md.
Mechanical Engineering.

**Jones, Robert Leslie (B.M.E., 1912) Buffalo, N. Y.
Mechanical Engineering.

Kelly, Mervin Joe (B.S., Missouri Univ., 1914) Lexington
Physics.

King, Margaret Isadora (A.B., 1898) Lexington
English.

**Korfhage, Harry George (B.M.E., 1912) Schenectady, N. Y.
Electrical Engineering.

LaMaster, Joseph Paul (B.S.Agr., 1912) Lexington
Dairying.

Ligon, Moses Edward (A.B., A.M., Georgetown, 1905) Lexington
Chemistry.

**Non-resident.

Love, Samuel Edwin (B.L., Cumberland, 1914) Lexington
Law.

**Lytle, Hendricks Gilbert (B.C.E., 1911) Birmingham, Ala.
Civil Engineering.

Maguire, Mary Josephine (B.S., 1904) Lexington
Chemistry, English.

**Naylor, Floyd Reed (B.C.E., 1911) Hickman
Civil Engineering.

Nicholls, William Durrett (B.S.Agr., 1907) Lexington
Sanitary Dairy Barns.

**Perrine, Emmet Burgess (B.M.E., 1909) Minneapolis, Minn.
Mechanical Engineering.

Pfanstiel, Robert (B.S., 1914) Lexington
Chemistry.

Piper, Mary Hammond (A.B., 1908) Lexington
Mathematics, English.

**Post, Shelby (B.C.E., 1910) Chattanooga, Tenn.
Civil Engineering.

Ragan, David Yandell (A.B., 1913) Cold Spring
Anatomy.

**Robertson, John Edward (B.C.E., 1912) Agricultural College, Miss.
Civil Engineering.

**Sanders, Joseph Bishop (B.M.E., 1911) Chicago. Ill.
Electrical Engineering.

Sartin, Basil Duke (LL.B., 1914) Lexington
Law.

**Shanklin, Shelby (B.M.E., 1910) Philadelphia, Pa.
Electrical Engineering.

**Skiff, Ralph (B.C.E., 1912) Mattoon, Ill.
Civil Engineering.

**Spahr, Robert Hoover (B.S., Washington and Lee, 1909) State College, Pa.
Civil Engineering.

**Stevenson, Wilbur Wesley (B.M.E., 1911) East Pittsburgh, Pa.
Electrical Engineering.

Taylor, Harry Edward (B.E.M., 1909) Williamsburg
Mining Engineering.

Terry, Lila Beatrice (A.B., 1898) Lexington
English, Spanish.

**Non-resident.

Townsend, William Henry	(LL.B., 1912) Law.	Lexington
**Utley, Newton Willard	(LL.B., 1912) Law.	Eddyville
**Yankey, Andrew George	(B.C.E., 1909) Civil Engineering.	Zamboanga, P. I.

**Non-resident

UNDERGRADUATES.

ABBREVIATIONS.

Classes.

1. Freshman.
2. Sophomore.
3. Junior.
4. Senior.
Sp. Special Student.

Courses.

Agr., Agriculture.
A. & S., Arts and Science.
Civ., Civil Engineering.
H. E., Home Economics.
Min., Mining Engineering.
Mech., Mechanical Engineering.
Law, Law.
Sh. Agr., Short Course in Agriculture.
R. & H. E., Rural and Highway Engineering

Aaron, George D.	(Mech. 2)	Liberty
Abell, Harry D.	(A. & S. 2)	Smithland
Abbett, Luke Cox	(Sh. Min.)	Georgetown
Acker, Jessie Elizabeth	(Agr. 4)	Paducah
Acton, Carl Bryan	(A. & S. 1)	Lancaster
Adams, Carroll Sidney	(Sp. Agr.)	Marlboro, N. H.
Adams, William Howard, Jr.,	(Sh. Min.)	Matewan, W. Va.
Adams, William Mason	(Civ. 2)	Flemingsburg
Adams, William Taylor	(Sh. Agr. 1)	Munfordville
Ades, Leon Morris	(Mech. 1)	Louisville
Adkins, William Koontz	(Mech. 1)	Depoy
Agnew, Helen	(Agr. 1)	Sebree
Albert, Russell Foster	(Civ. 3)	Elizabethtown
Alexander, Elizabeth Bell	(Agr. 2)	Midway
Allen, Eloise Saunders	(Agr. 1)	Lexington
Allen, Elvet Y.	(A. & S. 2)	Cromwell
Allen, R. J.	(R. & H. E.)	Lexington
Allen, William Frederick	(Mech. 2)	Georgetown
Allender, Harry Bedford	(Sp. Law)	Lexington
Allison, Gross Runkle	(Civ. 4)	Centre Hall, Pa.
Amburgy, Lawrence M.	(Agr. 2)	Hindman
Amburgy, Maryland D.	(Agr. 3)	Hindman
Ammerman, Lois	(A. & S. 2)	Poindexter
Anderson, Henry C.	(R. & H. E.)	Lexington

Anderson, Charles True	(Civ. 2)	Lexington
Anderson, Virginia Frances	(A. & S. 3)	Lexington
Andres, Paul Maxmilian	(Mech. 2)	Louisville
Apperson, James Hubert	(Law 3)	Commerce, Tex.
Applegate, Edward Perry	(10 Wks. Agr.)	Louisville
Armstrong, M. Evamonde	(Agr. 3)	Lexington
Armstrong, William Herschel	(A. & S. 1)	Central City
Arnold, Clarence Wilton	(Sh. Min.)	Powderly
Arnold, George Bowen	(Mech. 4)	Earlington
Arnold, Robert Samuel	(Mech. 1)	Richmond
Ashby, William Howard	(Sh. Agr. 2)	R. R. 1, Hanson
Aud, Joseph Guy	(Mech. 4)	Owensboro
Averitt, Clarence Joyce	(Agr. 1)	Bedford
Bachmann, Elmer Albert	(Sp. Agr.)	Berlin, Germany
Back, Roscoe Conklin	(Law 2)	Jackson
Bacon, B. T.	(R. & H. E.)	Munfordville
Bailey, Chesley W.	(A. & S. 3)	R. R. 5, Madisonville
Bailey, Esther Mae	(A. & S. 4)	Garden City, Kansas
Bailey, J. H.	(R. & H. E.)	Pineville
Bailey, J. Yost	(Agr. 4)	Adairville
Bailey, Samuel M.	(Civ. 1)	Newport
Bailey, William Henry	(Sh. Min.)	Hellier
Baker, Etna Jones	(A. & S. 2)	Murray
Barber, George Earlie	(Agr. 3)	R. R. 3, Owingsville
Barker, Clyde Russell	(A. & S. 3)	Brooksville
Barker, Harold Yancey	(Mech. 4)	Lexington
Barker, Milton Taylor	(Civ. 1)	High Point, N. C.
Barkley, Marie Rodes	(Sh. H. E.)	Lexington
Barnes, William Ferguson	(Mech. 1)	Sanibel, Fla.
Barnett, Edith Adrian	(Sp. A. & S.)	Murray
Barron, William Evan	(Sp. Law)	Lexington
Barrow, Betty Parham	(Sp. H. E.)	Lexington
Barth, Herbert Edwin	(Mech. 4)	Louisville
Bartlett, Lois	(Agr. 4)	Rockport
Bastin, Pearl Allyne	(A. & S. 3)	East Bernstadt
Batsel, Max Carter	(Mech. 4)	Fulton
Bauer, George Childs	(A. & S. 1)	Maysville
Bauer, Louis Henry	(Mech. 1)	Louisville
Baughn, William L.	(Sp. Law)	Lexington
Baxter, E. M.	(R. & H. E.)	Lexington

Baxter, J. G.	(R. & H. E.)	Richmond
Beagle, Seymour Ellis	(Mech. 1)	R. R. 1, Foster
Beard, Judith Ellen	(A. & S. 3)	Hardinsburg
Beasley, Gordon H.	(Civ. 2)	Williamstown
Beatty, Ernest Nutter	(A. & S. 1)	R. R. 7, Lexington
Becker, Marie Caroline	(A. & S. 2)	Louisville
Bedford, B. F.	(R. & H. E.)	Paris
Beitz, Susanna Valeria	(Sp. A. & S.)	Lexington
Bell, Jeanette Torrence	(A. & S. 4)	Fulton
Bell, Katherine Florence	(Sh. H. E.)	Lexington
Belwood, E.	(R. & H. E.)	Cropper
Bender, James Dallace	(Law 3)	Chattanooga, Tenn.
Bennett, Carlyle Wilson	(Agr. 2)	Narrows
Benton, T. H.	(R. & H. E.)	Hartford
Berkshire, Robert Ewing	(Law 3)	Petersburg
Berkshire, William Stewart	(Law 4)	Petersburg
Bernhardt, Carl Louis	(Agr. 3)	Newport
Berryman, Charles Hemphill	(10 Wks. Agr.)	Nicholasville
Berryman, Wheatley Hume	(A. & S. 1)	Versailles
Bettinger, Carl	(A. & S. 3)	Covington
Bezold, Calista Marion	(A. & S. 1)	Louisville
Bice, Forest Earl	(Sh. Min.)	Fleming
Bierbaum, Robert Louis	(Agr. 4)	Louisville
Bird, Horace Philemon	(Agr. 4)	R. R. 1, Shelbyville
Birk, Glover McMurtrey	(A. & S. 3)	Owensboro
Birney, R. I.	(R. & H. E.)	La Center
Bixby, Kenneth Sinclair	(Mech. 2)	Louisville
Black, R. L.	(R. & H. E.)	Harrodsburg
Blackburn, Albert Ricketts	(Mech. 4)	Petersburg
Blackburn, Edward A.	(Agr. 3)	Ludlow
Blackwell, Austin	(10 Wks. Agr.)	Clay
Blair, Carrie Frances	(A. & S. 2)	West Liberty
Blakey, Jr., Thomas Beatty	(Law 2)	Beattyville
Blalock, J. LeRoy	(Sh. Agr. 2)	Wingo
Blankenship, Wesley	(Sh. Min.)	Beech Grove
Bleidt, Everett Price	(Agr. 1)	R. R. 5, Lexington
Blue, Nell	(Sp. H. E.)	Grove Center
Boerner, Louis Fink	(Mech. 2)	Paris, Tenn.
Bogie, J. O.	(R. & H. E.)	Lancaster
Bohannon, Frank Tony	(Agr. 1)	Versailles

Bohrer, Rachael Marie	(Law 2)	Bellevue
Boleyn, Guilford	(A. & S. 3)	Ballard
Bolling, J. Esten	(Mech. 4)	Louisville
Boltz, J. Edward	(R. & H. E.)	Newport
Booker, Elizabeth Owsley	(Sp. Agr.)	Louisville
Boone, Florence Dollie	(A. & S. 1)	Lexington
Booth, Joseph Raymond	(Agr. 1)	R. R. 5, Paris
Borders, Leo Steele	(Mech. 2)	R. R. 10, Buechel
Borntraeger, Henry Winter	(A. & S. 1)	Louisville
Bosley, Alfred Dunbar	(Agr. 3)	Owensboro
Bosworth, J. C., Jr.	(Sp. Min.)	Lexington
Botto, Lary Lynn	(Sp. Mech.)	Boston
Boulevar, Ollie	(R. & H. E.)	Stanley
Bourland, Charles Rice	(Civ. 1)	Madisonville
Bowers, Charles LeRoy	(A. & S. 3)	Newport
Bowles, Dell	(Sh. Min.)	Earlington
Bowlin, Stinzer Linzy	(Sh. Min.)	Stone
Bowmar, Emily	(Sp. A. & S.)	Versailles
Boyes, William Roscoe	(Sh. Min.)	Van Lear
Bradford, Lawrence Allen	(Agr. 2)	Flemingsburg
Bradley, George Clifton	(Law 3)	Lexington
Brady, T. E.	(R. & H. E.)	Covington
Brannon, James	(R. & H. E.)	Maysville
Bratcher, Emmet Evait	(A. & S. 3)	Neafus
Breslin, Amy Isabelle	(A. & S. 4)	Louisville
Brewer, Elizabeth Carleton	(A. & S. 3)	Eminence
Briggs, George Waverley	(Sp. Law)	Lexington
Brittain, John Alfred	(Mech. 1)	Leadville, Colo.
Brock, John Gifford	(Sh. Agr. 1)	Winchester
Brooke, Minott	(Mech. 4)	Veechdale
Brooke, Rexie	(A. & S. 4)	Murray
Browder, Wallace Warfield	(10 Wks. Agr.)	Olmstead
Brown, Clarence Carlisle	(Agr. 1)	Williamstown
Brown, E. Marguerite	(A. & S. 4)	Lexington
Brown, F. C.	(R. & H. E.)	Lexington
Brown, George Sullivan	(Sh. Agr. 2)	Louisville
Brown, Hazel	(A. & S. 3)	Lexington
Brown, Lois Real	(Agr. 1)	Providence
Browning, Alma Lucille	(Sp. H. E.)	Falmouth
Browning, Iley Baker	(A. & S. 3)	Paducah

Bruning, Walter Oscar	(Mech. 2)	Louisville
Bryan, Mary Berkely	(Sh. H. E.)	Lexington
Buchignani, Teresa Eugenia	(A. & S. 4)	Lexington
Buckman, Hazel Alberta	(Sp. Agr.)	Conway, Kansas
Bullock, D. Ed.	(R. & H. E.)	Maysville
Bullock, Louis Ostek	(Sh. Min.)	Cleaton
Burgin, John	(R. & H. E.)	Harrodsburg
Burkhart, Ray Samuel	(10 Wks. Agr.)	R. R. 5, Kevil
Burgin, Manfred V.	(Civ. 2)	R. R. 8, Lexington
Burkholder, Helen Pauline	(Agr. 2)	Ashland City, Tenn.
Burnley, Edwin Ratcliffe	(Civ. 2)	Kevil
Burns, J. W.	(R. & H. E.)	Catlettsburg
Burrier, Mary King	(Agr. 4)	R. R. 2, Nicholasville
Burris, Roger	(R. & H. E.)	Paris
Burruss, James Cecil	(Sh. Mech.)	R. R. 7, Lexington
Burton, Cecil Madison	(Mech. 2)	Eminence
Butler, Ed.	(R. & H. E.)	Canevville
Button, Frank Whitfield	(Agr. 1)	Versailles
Button, Phebe Eliza	(Agr. 1)	Versailles
Byers, James Elliott	(Civ. 4)	Lexington
Cain, William Noel	(Sp. A. & S.)	Carlisle
Calloway, B. J.	(R. & H. E.)	Louisa
Campbell, David Patterson	(Agr. 4)	Louisville
Campbell, George Francis	(Mech. 4)	Butler
Campbell, John Thomas	(Agr. 2)	Campbellsburg
Canary, Jesse Earl	(Agr. 1)	Fordsville
Cantrell, Porter Groves	(Sp. Agr.)	Franklin
Carman, Armiel	(Agr. 3)	R. R. 9, Paris, Tenn.
Carnahan, Lester Holman	(Agr. 1)	Louisville
Carpenter, Elbert Alexander	(Sh. Min.)	Benham
Carroll, William	(Sh. Agr. 1)	New Castle
Carson, Daniel Creswell	(Civ. 1)	Richmond
Cart, Nutter Orville	(Sh. Agr. 1)	Versailles
Carter, Frank	(Sh. Min.)	Pleasant View
Carter, Joseph Carlyle	(Sp. Law)	Mayfield
Carter, Lyman Williams	(Sp. A. & S.)	Lexington
Cary, Elizabeth Robinson	(A. & S. 4)	Versailles
Cassidy, John Thomas	(A. & S. 1)	Lexington
Cassidy, Margaret	(Sp. A. & S.)	Lexington
Cassady, Ruth Louise	(A. & S. 1)	Versailles

Castro, Idalina Oliveira	(Sp. A. & S.)	Portugal
Caudill, David S.	(Sh. Min.)	Cannel City
Caudill, Samuel Jefferson	(Min. 3)	Cannel City
Cavallo, Emile Barton	(Civ. 1)	Vicksburg, Miss.
Caywood, Logan Bentley	(Mech. 4)	Hanley
Chamberlain, Jerome DeVize	(Law 2)	Uniontown
Chambers, Alvin Lee	(Civ. 4)	Nicholasville
Chambers, Clara Jane	(A. & S. 2)	Paris
Champion, M. C.	(R. & H. E.)	Lawrenceburg
Chandler, Edward Southgate	(Law 2)	Cynthiana
Chaney, Carl Neale	(10 Wks. Agr.)	Woodburn
Chappell, Phil Edward	(Mech. 1)	Cadiz
Cheatham, Ella Mae	(A. & S. 4)	Louisville
Chenault, Talitha Harris	(Sp. H. E.)	Lexington
Chenault, W. C.	(R. & H. E.)	Mt. Sterling
Cherry, George L.	(Mech. 3)	R. R. 3, Bowling Green
Childress, Hugh Judson	(Sp. Agr.)	R. R. 1, Jellico, Tenn.
Cisco, Byron Richard	(Law 2)	West Liberty
Clarke, Carter Weldon	(Mech. 1)	Smithland
Clark, Clarence O.	(A. & S. 1)	R. R. 6, Owensboro
Clark, Ernest Harold	(Mech. 3)	Lexington
Clark, Jr., Jefferson Davis	(Mech. 1)	R. R. 6, Lexington
Clarke, Marcus Jerome	(Agr. 3)	Owensboro
Clarke, Roy S.	(Mech. 2)	St. Charles, Mo.
Clark, William Thomas	(Agr. 2)	Vanceburg
Clarke, William Whitlock	(Civ. 3)	Owensboro
Clem, Lena Rivers	(A. & S. 1)	Bedford
Cloern, James	(Sh. Min.)	Earlington
Clore, Walter Kenneth	(Agr. 4)	Ludlow
Clugston, Mary Jane	(Sp. A. & S.)	R. R. 4, Lexington
Clutts, Charley Henry	(Sh. Min.)	Elys
Clutts, John William	(Sh. Min.)	Elys
Cobb, Edwin M.	(Agr. 1)	Richmond
Cody, Tom Henry	(Civ. 3)	Hindman
Cody, Will Francis	(A. & S. 1)	Fond du Lac, Wis.
Cole, Stanley Clarence	(Sh. Min.)	Elys
Colegrove, Anna Elizabeth	(A .& S. 4)	Ashland
Coleman, James Henry	(A. & S. 4)	Oak Grove
Collett, Fred Melville	(Sh. Agr. 1)	Bowling Green
Collier, Hugh Minter	(Civ. 2)	McKee

Collins, H. H.	(R. & H. E.)	Georgetown
Collins, Mrs. Mary C. Love	(Law 4)	Lexington
Collins, William Joel	(Law 2)	Richmond
Combest, Homer Burke	(Agr. 2)	Liberty
Combs, Anthony Burnam	(Law 3)	Hindman
Combs, Sewell Stanley	(Law 3)	Chavies
Combs, Townsel	(Civ. 4)	Smithsboro
Conditt, Marion Uri	(A. & S. 2)	Marion
Conley, Harlen Crittenden	(Sh. Min.)	Loveland
Connell, James Salmon	(Agr. 4)	Lexington
Cook, J. W.	(R. & H. E.)	Owensboro
Cooke, Samuel Edwards	(Civ. 4)	Harrodsburg
Coons, Bettie Louise	(Agr. 3)	R. R. 4, Lexington
Cooper, John William	(Mech. 1)	Nicholasville
Corbin, Ruth Ione	(A. & S. 1)	Sullivan, Ill.
Corn, James Franklin	(A. & S. 3)	Harrodsburg
Cottingham, Wayne Taylor	(A. & S. 1)	Paris
Cottrell, Harry	(Agr. 1)	Owensboro
Courtney, Samuel Newton	(Mech. 4)	Owensboro
Coward, Richard Whitman	(Mech. 2)	Coal Creek, Tenn.
Cox, Henry Clay	(Agr. 3)	West Liberty
Cox, James Robert	(Agr. 1)	Versailles
Crabbe, Anita Dickerson	(A. & S. 1)	Louisville
Craig, Albert Gallatin	(Agr. 4)	Ghent
Cramer, Johnny Vie	(Agr. 2)	Lexington
Cramer, Minnie Toler	(Agr. 4)	Lexington
Cramer, Willard Frederick	(A. & S. 2)	R. R. 1, Lexington
Crawford, Ada Mae	(Sh. H. E.)	Lexington
Crawford, Nellie Florence	(A. & S. 2)	Lexington
Crawford, Rose Maud	(A. & S. 2)	Lexington
Crawley, Jr., William Patrick	(Mech. 4)	Louisville
Creekmore, James M.	(Sh. Min.)	Strunk
Creekmore, Thomas Lindsay	(Law 2)	Lexington
Cregor, Cecelia Bartlett	(Agr. 1)	Lebanon
Cregor, Minton	(Agr. 3)	R. R. 3, Lebanon
Crenshaw, John Warner	(Mech. 1)	Versailles
Crenshaw, William Percy	(Mech. 1)	Versailles
Cress, A. J.	(R. & H. E.)	Monticello
Croan, Walter Bruce	(Mech. 4)	Shepherdsville
Croft, T. J.	(R. & H. E.)	Catlettsburg

Cromwell, Henry Frye	(A. & S. 3)	Cynthiana
Crooks, Walter	(R. & H. E.)	Mt. Sterling
Cropper, F. M.	(R. & H. E.)	Lexington
Crouch, W. P.	(R. & H. E.)	Glencoe
Crouse, William	(R. & H. E.)	Frankfort
Crow, Elizabeth	(A. & S. 2)	R. R., Lexington
Crowder, Orvel Wendel	(Sp. Mech.)	Lexington
Cruickshank, Grace Anderson	(A. & S. 4)	Lexington
Cruickshank, Lucille Harrison	(Agr. 3)	Lexington
Crum, Frank Moore	(A. & S. 2)	Inez
Crutchfield, Sydney Burnett	(10 Wks. Agr.)	Fenton
Crutcher, Morrie Julian	(Mech. 2)	Louisville
Cullen, Robert Emmet	(Law 3)	Flemingsburg
Culver, Lola May	(A. & S. 2)	Corydon
Cundiff, W. G.	(R. & H. E.)	Somerset
Cunningham, Jr., Robert Morrison	(Mech. 2)	Louisville
Curry, D. L.	(R. & H. E.)	Harrodsburg
Dabbs, Grace Truman	(A. &. S. 2)	Lexington
Dale, Carroll Patterson	(Sh. Agr. 1)	Lexington
Darnaby, Ernest Heathman	(Agr. 4)	Clintonville
Darnall, Ina Marion	(A. & S. 3)	Paducah
Davidson, Carl Rogers	(Mech. 2)	Lexington
Davidson, Leonard Thornton	(Mech. 1)	Lexington
Davies, Arthur Wayne	(Mech. 2)	Lexington
Davis, Charles Eberley	(Agr. 1)	R. R. 2, Sturgis
Davis, Robert Morris	(Mech. 1)	Utica
Davis, R. W.	(R. & H. E.)	Lexington
Davis, William Terry	(Agr. 4)	Fulton
Dawes, Frances Marie	(A. & S. 1)	Fulton
Dean, Ada Bransford	(Agr. 4)	Owensboro
Dean, Edith Cary	(A. & S. 3)	Owensboro
Dean, Garnett Lee	(Agr. 1)	Harrodsburg
Dearborn, Elbert Rorer	(Mech. 1)	Cynthiana
Deering, John Stratton	(Law 3)	Nicholasville
DeLaine, Vivian Elsie	(A. & S. 1)	Carrollton
Delaney, James Foster	(Agr. 2)	Carlisle
Dempsey, Frank Walton	(A. & S. 1)	Burlington
Denton, Cromwell Sayre	(Sh. Agr. 1)	Lexington
Desha, Helen Elizabeth	(A. & S. 4)	Paris
Devera, Norberto	(Law 2)	Philippine Islands

Dickerson, Charles Bingley	(Sp. Mech.)	Paris
Dickerson, Henri Earl	(A. & S. 2)	Paris
Dickey, Jane Kennedy	(A. & S. 2)	Richwood
Dillman, J. H.	(R. & H. E.)	Hopkinsville
Dinkle, Vernon Andrew	(Sp. Law)	Catlettsburg
Dishman, Silas Benjamin	(Law 4)	Barbourville
Dix, William Hewitt	(Mech. 3)	Stephensport
Dixon, Paul Errett	(Law 4)	Lexington
Dobbs, George Whipple	(Mech. 2)	Louisville
Dodson, Colyar P.	(A. & S. 2)	Utica
Donaldson, E. R.	(R. & H. E.)	Sharpsburg
Donohoo, David Dallas	(A. & S. 4)	R. R., Lexington
Donohoo, G. C.	(R. & H. E.)	Springfield
Doris, Kenneth	(Mech. 3)	Dixon
Dotson, Clifford T.	(Law 2)	R. R. 1, Olmstead
Dotson, William Ira	(A. & S. 2)	R. R. 5, Carlisle
Dougherty, Mary Louise	(A. & S. 3)	R. R. 2, Maysville
Douglas, Mabel Ray	(Sp. H. E.)	Jellico, Tenn.
Dowell, D. D.	(R. & H. E.)	Hardinsburg
Downing, Columbus Gibson	(Agr. 4)	R. R. 1, Lexington
Downing, Willis Taylor	(Mech. 1)	Lexington
Draffen, Errol Wallace	(Law 2)	Lawrenceburg
Drake, Ellis Ewen	(Mech. 2)	Lexington
Drake, William Perry	(Law 4)	Bowling Green
Dugan, J. G. Carlisle	(Sh. Agr. 2)	Louisville
Duke, Spottswood Wellford	(A. & S. 2)	Hinton, W. Va.
Duncan, Elizabeth Bryan	(A. & S. 1)	Lawrenceburg
Duncan, Florence Ethel	(A. & S. 1)	Lawrenceburg
Dunn, Charles Kemper	(Mech. 3)	Lancaster
Dunn, Frank Leonidas	(Agr. 1)	Dawson Springs
Durham, Jerome Parker	(Sp. Agr.)	Central City
Eaker, Eleanor Flora	(A. & S. 1)	Princeton
Early, Charles Cuvier	(Agr. 1)	Lexington
Easley, William Jeffrey	(Agr. 2)	Lexington
Edmond, Eugene Allen	(Sp. Mech.)	Winchester
Edwards, Aleene Bradford	(A. & S. 4)	Butler
Edwards, Ordie Morton	(A. & S. 2)	R. R. 1, Caneyville
Edwards, W. H.	(R. & H. E.)	Versailles
Ehrlich, Robert Lee	(Civ. 4)	Ludlow
Eichelberger, Frederick L. A.	(Law 2)	McKee Rocks, Pa.
Eichhorn, Theo. F.	(Mech. 4)	Cynthiana

Eimer, Albert Lee	(Mech. 2)	Newport
Eimer, Edwin John	(A. & S. 3)	Newport
Elam, Botner F.	(Sp. Mech.)	Louisa
Eldridge, Elizabeth Farn	(A. & S. 4)	R. R., Paint Lick
Elgin, Samuel Pyle	(Sh. Agr. 1)	Hopkinsville
Elkin, Bertha Davis	(A. & S. 2)	Lexington
Elkin, Myrtle	(Sp. Agr.)	Lexington
Elliott, Dennie David	(Agr. 4)	Eubank
Elliott, Foster Floyd	(Agr. 1)	Eubank
Ellis, Dee Richard	(Mech. 1)	Eminence
Ellis, Hilton Hayden	(Sh. Agr. 1)	R. R. 1, Falmouth
Elston, Charles B.	(Agr. 4)	Turners Station
Elston, Wallace Smith	(Sh. Agr. 1)	Turners Station
Elswick, Kit Carson	(Law 2)	Bottsfork
Embry, Cecil Joel	(Sp. Agr.)	Lexington
Emmert, Louis Joseph	(Law 4)	Wheeling, W. Va.
Engle, Stanley L.	(A. & S. 2)	McKee
Estes, Lila Caye	(A. & S. 3)	Lebanon
Eubank, Albia Linea	(Mech. 1)	Columbia
Eubank, Warren Lyddane	(Law 3)	Lexington
Evans, Herndon Julian	(A. & S. 1)	Frankfort
Evans, James Howard	(Mech. 2)	Lebanon
Evans, Lynn Barkley	(Mech. 4)	Lebanon
Ewing, Noble Prior	(Agr. 1)	Bedford
Eyl, William Christopher	(Min. 2)	R. R. 3, Lexington
Falconer, Mrs. Louise Goodloe	(Sp. A. & S.)	Lexington
Fannin, Nicholas Becker	(10 Wks. Agr.)	Catlettsburg
Farmer, James Napoleon	(Law 3)	Somerset
Farra, Ann Elizabeth	(Agr. 3)	Nicholasville
Farra, Lucian Vincent	(Sp. Agr.)	Nicholasville
Farrell, Hardin Casing	(Sh. Min.)	Central City
Farrell, Josephine Edwards	(Sp. A. & S.)	Lexington
Farrow, Sam T.	(R. & H. E.)	Maysville
Faulconer, Pelham Lightburn	(Agr. 1)	Lexington
Faulkner, Frank Vernon	(Sp. Law)	Barbourville
Faulkner, Robert T.	(Agr. 1)	Barbourville
Fearing, Henry Lincoln	(Mech. 2)	Olympia
Featherston, R. F.	(R. & H. E.)	Lexington
Felix, Herbert Franklin	(A. & S. 3)	Hartford
Fenley, Richard Boggess	(Agr. 1)	Valley Station

Field, Benjamin Temple	(Agr. 1)	R. R. 2, Owensboro
Field, Jean Olive	(A. & S. 3)	Lexington
Finney, Milton Carroll	(A. & S. 1)	Frankfort
Fish, John Shuff	(Agr. 3)	Georgetown
Fishback, George Benjamin	(Mech. 1)	Mt. Vernon
Fishback, Rutherford Y.	(Civ. 2)	Pine Grove
Flanagan, J. M.	(R. & H. E.)	Madisonville
Flanery, John Wilson	(10 Wks. Agr.)	Berea
Flege, John Blain	(Agr. 1)	Williamstown
Flege, Robert Frederic	(A. & S. 1)	Williamstown
Flocken, Jacob John	(Min. 1)	Louisville
Florence, Jessie Hunt	(Agr. 2)	R. R. 2, Cynthiana
Flynn, Edward Roscoe	(Mech. 1)	Paducah
Fogg, R. J.	(Law 3)	Lexington
Ford, Ben Conway	(Agr. 1)	Owensboro
Ford, Ernest	(10 Wks. Agr.)	R. R. 5, Kevil
Ford, Hallie	(R. & H. E.)	Mayfield
Ford, John F., Jr.	(Law 4)	Georgetown
Ford, Robert Harvey	(Sp. Agr.	Winchester
Ford, T. L., Jr.	(R. & H. E.)	Catlettsburg
Foreman, Charles B.	(Sh. Agr. 1)	Taylorsville
Forman, Howard Clark	(Civ. 1)	Williamstown
Fowler, Earl Louis	(Law 4)	Waverly
Fowler, Orie Lee	(Law 2)	R. R. 7, Cynthiana
Frazier, Emery Lee	(Law 1)	Lawrenceburg
Frazier, Edward Rowland	(Law 2)	Corydon
Frazer, Mary S.	(Sh. H. E.)	Lexington
Freeman, George Quincy	(Sh. Min.)	Wofford
Fried, Hyman	(Civ. 2)	Flemingsburg
Friel, F. W.	(R. & H. E.)	Hawesville
Froman, Elizabeth Howe	(A. & S. 2)	Lexington
Frost, John	(Sh. Min.)	Wilton
Frost, Joseph Lincoln	(Sh. Min.)	Wilton
Frost, Sue Hunt	(A. & S. 3)	Louisville
Frye, Kenneth Castleman	(Civ. 2)	Waddy
Fuqua, Lindsay Hart	(Mech. 1)	Cadiz
Fuss, John Carroll	(Civ. 1)	Frankfort
Gabbert, William Richard	(Agr. 1)	Louisville
Gaddis, Martin Vest	(Sh. Min.)	Providence
Gaines, J. R.	(R. & H. E.)	Louisville

Gaines, Lillian Askew	(A. & S. 2)	Hopkinsville
Gaines, Robert Logan	(Agr. 1)	Carrollton
Galanty, Abe Davis	(A. & S. 3)	Maysville
Galbraith, Harry Carol	(Agr. 4)	Brooksville
Galloway, Floyd Emerson	(Agr. 4)	Paris
Garred, Nancy Louise	(A. & S. 1)	Lexington
Garred, Ulysses Victoria	(Mech. 1)	R. R. 1, Louisa
Garrett, James Douglas	(Mech. 3)	Fort Garrett
Garrett, William R.	(Sh. Min.)	Echols
Garrow, Agnes Kathleen	(Agr. 1)	Paducah
Gaugh, Clarence Russell	(Civ. 2)	Lexington
Gault, C. G.	(R. & H. E.)	Maysville
Gault, Lelah Vaughn	(Agr. 1)	R. R., Maysville
Geisel, Frances Dudley	(Agr. 2)	Maysville
Gelder, John Thomas	(Mech. 4)	Rochester, N. Y.
Gentry, Marcus Karl	(10 Wks. Agr.)	Lexington
Gerhard, Paul	(Sp. Agr.)	Covington
Gibson, John Marshall	(Agr. 1)	Irvington
Gilbert, Raymond Harlan	(Agr. 1)	Covington
Ginocchio, Francis Salvini	(Law 3)	Lexington
Ginocchio, Lawrence Sylvester	(Agr. 1)	Lexington
Gish, Samuel C.	(Law 2)	Central City
Givan, Claud S.	(Agr. 1)	Solway
Givens, James Douglas	(Mech. 1)	Uniontown
Glenn, William Meade	(Mech. 3)	Georgetown
Glickman, David	(Law 1)	Pineville
Golden, Harold Webb	(Mech. 2)	Demossville
Gooch, John Thomas	(Law 4)	Hanson
Goodridge, Charles W.	(R. & H. E.)	Burlington
Goodwin, Marietta	(Sp. H. E.)	Lexington
Goosman, Karl William	(Mech. 1)	Richmond
Gordon, Angus Neal	(Sp. Agr.)	Lexington
Gordon, Charles William	(Mech. 1)	Lexington
Gordon, Thomas B.	(Agr. 2)	Lexington
Gosney, Worth	(R. & H. E.)	Butler
Gossage, Paul Houston	(Sp. Law)	Lola
Grabfelder, Earle	(A. & S. 1)	Louisville
Grady, Lester Winston	(A. & S. 4)	Granite, Okla.
Graddy, Ivan Clay	(Agr. 2)	Utica
Graham, Herbert Dade	(A. & S. 3)	Frankfort

Grainger, Annabel	(A. & S. 4)	Paducah
Grainger, Frank Rogers	(Min. 1)	Paducah
Gray, Everett Wilson	(Min. 2)	Flemingsburg
Gray, Presley	(Mech. 2)	Beaver Dam
Green, Logan Nourse	(Law 3)	Hopkinsville
Greene, Sherman Alexander	(Sh. Min.)	Powderly
Greene, Richard M.	(Agr. 1)	Georgetown
Greenbaum, Herman	(Mech. 1)	Midway
Gregory, Alice Miller	(Sp. Agr.)	Louisville
Gregory, Jesse Forrest	(Law 2)	R. R. 6, Owensboro
Gribbin, Eugene Leigh	(A. & S. 1)	Lexington
Griggs, Clarence Carlisle	(Mech. 3)	Roberta
Grimes, William P., Jr.	(Agr. 1)	Stanford
Grinter, Thomas Hill	(A. & S. 1)	Cadiz
Grossman, Herbert Robert	(Mech. 1)	Louisville
Grubbs, Samuel Flowers	(Agr. 1)	Adairville
Grubbs, Thomas Dillard	(Sp. A. & S.)	Mt. Sterling
Gruber, Mary Elizabeth	(Agr. 1)	Shelbyville
Gumbert, George Martin	(Agr. 2)	Richmond
Gunn, Esta Olivet	(A. & S. 4)	Lexington
Guyn, J. White	(R. & H. E.)	Lexington
Haff, Frank Withrow	(Mech. 4)	Frankfort
Haffler, Whayne Wilson	(Mech. 2)	LaGrange
Hagan, F. P.	(R. & H. E.)	Lexington
Hager, Reuben William	(Civ. 1)	Grant
Haggan, Henry Clay	(Agr. 1)	Covington
Haley, Clarence Foster	(A. & S. 3)	Brooksville
Hall, Frank P.	(Sp. Law)	Rail
Hall, Jacqueline Thomas	(A. & S. 3)	Paris, Ill.
Hamilton, Mary Katherine	(A. & S. 2)	Cynthiana
Hamilton, Maxwelton Ewing	(Agr. 1)	Uniontown
Hamilton, Scott Isaac	(Sh. Agr. 1)	Louisville
Hamilton, Stanton Egbert	(Civ. 3)	Brooksville
Hammond, John Lewis	(Agr. 1)	Vanceburg
Hammond, John Sherman	(Sh. Min.)	Kilgore
Hamon, Andrew	(Sp. Law)	Lexington
Hampton, Rose Lenore	(A. & S. 2)	Corinth
Hanley, Walter	(Min. 4)	Maysville
Hanna, Charles Broadus	(Sh. Agr. 2)	Shelbyville
Hanson, Raymond W.	(Mech. 1)	Germantown

Harbison, Clinton McClarty	(Sp. A. & S.)	Shelbyville
Hardwick, Robert Eugene	(A. & S. 1)	Livia
Harmon, W. L.	(R. & H. E.)	Bedford
Harney, Clarence Wilbur	(A. & S. 2)	R. R., Cynthiana
Harney, Mrs. Mary Stewart	(Sp. A. & S.)	Lexington
Harris, Andrew Jackson	(Sh. Min.)	Cleaton
Harris, William Jefferson	(Agr. 3)	Nolan, W. Va.
Harrison, Clyde Dugan	(Agr. 1)	Lebanon
Harrison, Fred Ambrose	(Law 3)	Lexington
Hart, Aubrey Maxmilian	(Mech. 1)	Uniontown
Hatfield, Leonard Franklin	(A. & S. 3)	Berea
Hatter, Emmett Presley	(A. & S. 2)	Franklin
Hauck, Milton John	(Agr. 1)	Newport
Hawkins, Robert Dawson	(Mech. 4)	Lexington
Haydon, Charles Joseph	(Law 2)	Springfield
Haydon, Otho, Jr.	(R. & H. E.)	Franklin
Hayden, Thomas Hubert	(Agr. 1)	Artemus
Haydon, Thomas Simms	(Sh. Agr. 1)	Springfield
Haynes, Thomas Francis	(Mech. 4)	Owensboro
Hays, Josie Lacer	(A. & S. 3)	Owensboro
Hays, Rutherford B.	(Agr. 2)	R. R. 11, Mayfield
Hayes, R. B.	(R. & H. E.)	Lexington
Hazelrigg, Nicholas Barnhill	(10 Wks. Agr.)	Beaver Dam
Head, S. Walter	(Law 2)	Fordsville
Heath, Robert Miller	(Agr. 3.)	Bedford
Heathman, Masie Tudor	(Agr. 1)	Lexington
Hedges, James M., Jr.	(Mech. 2)	Lexington
Heller, Elsie B.	(Mech. 3)	Paris
Helm, Logan Bullock	(Mech. 2)	Lexington
Hendren, Jasper Bradley	(A. & S. 1)	R. R., Silver Creek
Henry, J. M.	(R. & H. E.)	Lexington
Henson, John Earl	(Sh. Agr. 1)	Dixon
Henry, Hall Massillon	(Mech. 1)	Dixon
Henton, James Dudley	(10 Wks. Agr.)	Versailles
Herndon, John Presley	(Mech. 1)	Frankfort
Herndon, Ora Lee	(Mech. 1)	R. R. 3, Carlisle
Herrin, Allen Aldridge	(Sp. A. & S.)	R. R. 2, Providence
Herz, Charles	(A. & S. 1)	Lexington
Heyman, Laurence Jerome	(A. & S. 3)	Lexington
Hickerson, Broadus Edward	(Law 2)	Springfield

Hicks, Charles B.	(R. & H. E.)	Munfordville
Hicks, Herbert Eugene	(Law 2)	Madisonville, Tenn.
Hieatt, Kate Gray	(A. & S. 2)	R. R. 8, Lexington
Hieatt, Martha Fox	(A. & S. 4)	R. R. 8, Lexington
Hieronymous, William Shelton	(Agr. 1)	St. Helens
Higgins, James Thomas	(Sh. Min. 1)	Belvidere, Ill.
Higgins, Sue Wallace	(Sp. H. E.)	Lancaster
Hill, George Hammeken, Jr.	(Civ. 2)	Bluefield, W .Va.
Hill, James, Jr.	(Mech. 1)	Stanley
Hill, John Parker	(Min. 1)	Vanceburg
Hite, Paul Amory	(Law 4)	Frankfort
Hobson, Leander Reed	(Mech. 1)	Richmond
Hobson, Marguerite Barbour	(A. & S. 1)	Harrods Creek
Hodges, Annie Newell	(A. & S. 4)	Greensburg
Hodges, J. Adair	(Agr. 2)	Greensburg
Hogan, F. P.	(R. & H. E.)	Lexington
Hogrefe, John H.	(Civ. 3)	Walton
Hollingsworth, Granville	(Sp. Agr.)	Bowling Green
Hollowell, Ludie Estella	(A. & S. 4)	Princeton
Holt, J. Thruxton Stanley	(Sp. Agr.)	Munfordville
Holton, Emma Gladys	(A. & S. 1)	Forks of Elkhorn
Hood, Richard H.	(Law 4)	Murray
Hook, Howard Monarch	(Sh. Mech. 1)	Hardinsburg
Hopkins, Arthur Thornberry	(Mech. 2)	Frankfort
Hopkins, Charles William	(A. & S. 1)	Demossville
Hopkins, Christine	(A. & S. 4)	Louisville
Hopkins, Elmer Woodson	(Civ. 3)	Henderson
Horine, Henry Price	(Mech. 2)	Nicholasville
Horine, Miriam Virginia	(A. & S. 2)	Nicholasville
Hornsby, Thomas Lewis, Jr.	(Sh. Agr. 1)	R. R. 2, Eminence
Horton, James Courtney	(Sp. Agr.)	Mt. Sterling
Horton, Rowland Miller	(Agr. 2)	Louisa
Hostetter, J. H.	(R. & H. E.)	Lexington
Hounchell, Harry Lee	(Sh. Agr. 1)	Lexington
Howard, Mary Wells	(A. & S. 3)	Benton
Howe, Benjamin David	(Civ. 3)	Elizaville
Howe, Kenneth Plummer	(Mech. 4)	Elizaville
Hubble, Clyde Murphy	(Agr. 2)	Somerset
Hudson, Sherley	(Civ. 1)	Louisville
Huff, Aaron Baron	(Mech. 3)	Berea

Hughes, Florence Brown	(A .& S. 3)	Lexington
Hughes, Merritt McCauley	(Mech. 4)	Versailles
Hume, James J.	(Min. 2)	Falmouth
Hummel, Frederick John	(Min. 1)	Louisville
Hundley, Robert Edward	(Mech. 3)	Owensboro
Hunt, C. A.	(R. & H. E.)	Morgantown
Hunt, Russell Aubrey	(Agr. 1)	Livia
Hutcherson, Lyon B.	(10 Wks. Agr.)	Glasgow
Hutchison, Frank Young	(Mech. 2)	Nicholasville
Hutchinson, Ronald	(Agr. 2)	London, England
Iglehart, Royse McMurtrey	(Agr. 1)	Hartford
Iler, Wayne Dickerson	(A. & S. 3)	Covington
Ingels, Margaret	(Mech. 3)	Lexington
Ingram, Raymond	(Agr. 1)	Versailles
Innes, Nancy Webb	(A. & S. 2)	Lexington
Ireland, Gatewood.	(Mech. 4)	LaGrange
Ireland, Robert Young	(Civ. 1)	LaGrange
Jackson, George Louis	(Mech. 2)	Franklin
Jackson, Homer Ramsey	(Agr. 1)	R. R. 2, Arlington
Jackson, John Thomas	(Mech. 4)	Lexington
Jacob, George Lawrence	(Civ. 1)	Franklin
Jake, Cecil Calvert	(Sp. Agr.)	Owensboro
James, Robert Lee	(Sp. Agr.)	R. R. 5, Lexington
Jameson, Laura Lee	(Agr. 1)	R. R. 6, Cynthiana
Jarvis, Walter M.	(Mech. 1)	Barbourville
Jasper, Milton Gaines	(Agr. 1)	Richmond
Jefferson, Carlyle	(Mech. 4)	Louisville
Jennings, Hal Keith	(Mech. 1)	Murray
Jesup, William E.	(Sh. Agr. 1)	Hopkinsville
Johnson, Alfred Holbrook	(A. & S. 4)	Paintsville
Johnson, Archibald Leonard	(A. & S. 3)	Tallega
Johnson, Edward Marshall	(Agr. 1)	Vanceburg
Johnson, Frank H., Jr.	(Agr. 2)	Louisville
Johnson, Genevieve	(A. & S. 3)	Linneus, Mo.
Johnson, Joe Rufus	(Agr. 1)	Clinton
Johnson, Mary Belle	(A. & S. 3)	Tallega
Johnson, Samuel Camp	(Agr. 2)	Louisa
Johnstone, William Clarkson	(Agr. 3)	R. R. 3, Nicholasville
Jones, Carrie Lee	(Agr. 1)	Lexington
Jones, Elmer Burton	(Min. 2)	Louisville

Jones, Emily Flora	(A. & S. 1)	Monticello
Jones, James William	(Agr. 4)	Calvert City
Jones, Jeff Terry	(Law 4)	Lexington
Jones, Leslie Phillip	(Agr. 2)	Sedalia
Judd, Bessie Fogle	(A. & S. 3)	Lexington
Judd, Melvin Hays	(A. & S. 3)	Lexington
Jurney, Roy Stephen	(Mech. 1)	Hickman
Kallbreier, William Joseph	(Law 1)	Buckner
Karrick, James Vance	(Civ. 4)	Lexington
Kastle, Elizabeth Thane	(A. & S. 2)	Lexington
Kavanaugh, Aileen Gilbert	(A. & S. 1)	Lawrenceburg
Kavanaugh, Mrs. Rhoda Caldwell	(A. & S. 4)	Lawrenceburg
Keene, Paul	(Sp. Mech.)	Georgetown
Kelley, Arthur Sewall	(A. & S. 2)	Whitesville
Kelley, James Otis	(A. & S. 4)	Whitesville
Kelly, John Carroll	(Mech. 1)	Mt. Sterling
Kelso, Clyde Douglas	(Sp. Agr.)	Madisonville, Tenn.
Kendall, Vernon Valentine	(10 Wks. Agr.)	Hopewell
Kennedy, Frank Hopkins	(Agr. 4)	Lexington
Kenney, J. H.	(R. & H. E.)	Versailles
Kerswill, Lela May	(A. & S. 1)	Lexington
Kercheval, Nancy Magdalene	(Sp. H. E.)	Catlettsburg
Ketson, James A.	(Sh. Min.)	Packard
Kice, Hugh Miller	(Mech. 2)	Louisville
King, Anthony Clairborne	(Law 2)	Louisville
King, Harold E.	(Min. 2)	Louisville
King, William Thomas	(Sp. Mech.)	Richmond
Kinkead, J. R.	(R. & H. E.)	Hillsboro
Kinkead, Sidney Clay	(Agr. 2)	Lexington
Kinne, Howard Irving	(Civ. 1)	Lexington
Kinne, Theresa Harriet	(A. & S. 1)	Stearns
Kirtley, Elliott Campbell	(Agr. 1)	Frankfort
Kolb, Edwin Henry	(Sp. Mech.)	Buffalo, N. Y.
Kolbe, Henry J.	(Mech. 1)	Lexington
Kraemer, Albert John	(A. & S. 4)	Brodhead
Kring, Chloerine Estill	(Agr. 1)	Flemingsburg
Kumli, Charles Frank	(A. & S. 3)	Middlesboro
Lackey, John Miller	(10 Wks. Agr.)	Berea
Lail, Webb	(Mech. 4)	Lexington
LaMaster, B. F.	(Sp. A. & S.)	R. R. 1, Sulphur

LaMaster, Jesse Snowden	(Sh. Agr. 2)	R. R. 1, Sulphur
LaMaster, Orem	(Agr. 2)	Campbellsburg
Lambert, Elmer Lee	(Agr. 2)	Lexington
Lamond, Sam Givens	(10 Wks. Agr.)	R. R. 1, Paducah
Landsberg, Thomas Henry	(Mech. 1)	Versailles
Land, Robert Henry	(Agr. 3)	Hanly
Lavercombe, Raymond	(Civ. 4)	Newport
Lawrence, Mrs. Mamie Carrithers	(10 Wks. Agr.)	Shelbyville
Lawson, Ector Smith	(A. & S. 1)	Lancaster
Lay, Chong-Yuen	(Civ. 4)	Hupek, China
Leathers, T. J.	(R. & H. E.)	Sinai
Lee, Chilton Frazier	(Mech. 2)	Shepherdsville
Lee, Owen Scott	(A. & S. 4)	Sadieville
Leeper, James Ellis	(Sh. Min.)	Providence
Leibovitz, Alex B.	(A. & S. 4)	Lewisport
Lemon, Frieda Blanche	(A. & S. 1)	Providence
Lenihan, William A.	(Sp. Mech.)	Paris
Leonard, Mary Goodloe	(Sp. H. E.)	Lexington
Leonian, Leon	(Agr. 3)	Van, Armenia
Lewis, Anna Egli	(A. & S. 3)	Franklin
Lewis, Florence Annette	(Agr. 1)	London
Lewis, Henry Passant	(Agr. 1)	London
Lewis, Junius	(Agr. 1)	R. R. 1, Stanley
Lewis, Ray Clarke	(A. & S. 1)	London
Liebschutz, Jacob	(A. & S. 2)	Louisville
Ligon, John McGarvey	(Agr. 4)	Barbourville
Likens, Everett Ray	(A. & S. 1)	Beaver Dam
Lillard, Eugene Allen	(A. & S. 1)	Versailles
Lillard, Katherine Davis	(A. & S. 1)	Versailles
Lindsay, John William	(Agr. 1)	Covington
Lindsay, William Robert	(Civ. 1)	Dawson Springs
Linton, Albert Jacob	(Mech. 1)	Elizabethtown
Little, Elmer	(R. & H. E.)	Owensboro
Littleton, Edward Lottice	(Mech. 2)	R. R. 1, Puryear, Tenn.
Lloyd, Brilla May	(Agr. 4)	Lexington
Lloyd, O. B.	(R. & H. E.)	Paris
Logan, William Lindsay	(Mech. 1)	R. R. 7, Shelbyville
Long, Henry Sherley	(Agr. 1)	Bedford
Lostutter, Wesley Conn	(Mech. 2)	Carrollton
Lovelace, Harry Gordon	(Min. 3)	Red Ash
Lovell, Charles William	(Civ. 3)	Greenville

Lowry, Ben H.	(Sp. Agr.)	Catlettsburg
Lowry, Samuel Jechonias, Jr.	(Agr. 4)	R. R. 2, Oak Grove
Lucas, LeGrand	(R. & H. E.)	Versailles
Lucas, Samuel	(R. & H. E.)	Versailles
Lunsford, Robert Lewis	(Mech. 2)	Hickman
Luter, Clarence Edwin	(Sp. A. & S.)	Murray
Lutkemeier, Carolyn Frances	(A. & S. 3)	Frankfort
Lyle, Josephine Irvine	(Sp. Agr.)	Lexington
Lyle, Judith Virginia	(Agr. 2)	Lexington
McAdams, Oliver Kennett	(A. & S. 1)	Lexington
McBrayer, Major W.	(Law 4)	Lawrenceburg
McBrayer, Lindsey	(Sh. Min.)	Kettle Island
McCarthy, Frank Lawrence	(Law 2)	Lexington
McCarthy, Margaret Claire	(A. & S. 2)	Lexington
McCarty, Gambrell	(Agr. 3)	Owensboro
McCauley, Joe Muir	(Sh. Min.)	DeKoven
McCaulley, Marion Robert	(Law 4)	Louisville
McClain, Lee	(A. & S. 1)	Bardstown
McClannahan, Luther Cleveland	(Mech. 2)	Cleveland, Ohio
McClellan, James Ellyson	(Mech. 1)	Springfield
McClintock, Laura B.	(Sp. H. E.)	R. R., Lexington
McClure, Charles Rose	(Mech. 1)	Lawrenceburg
McClure, Eugene Thomas	(Sp. Agr.)	Gallup
McClure, John Edwin	(Agr. 1)	R. R. 4, Mt. Sterling
McClure, Orrie Lee	(Mech. 1)	Springfield
McCone, John Alfred	(Civ. 2)	Matthews, Indiana
McConnell, James Hubbard, Jr.	(Sp. Agr.)	Arlington
McConnell, Robert Frayser	(Sh. Agr. 1)	Arlington
McConnell, Sara Winn	(A. & S. 2)	Arlington
McConnell, Virginia Vertner	(A. & S. 1)	Lexington
McCormick, Charles Ellsworth	(Mech. 2)	Shepherdsville
McCown, Thomas Chenault	(Agr. 2)	Richmond
McCracken, Morris Leon	(Agr. 3)	Louisville
McCromick, Ollie	(R. & H. E.)	Mt. Sterling
McCreight, Jim Marlin	(Mech. 1)	Reynoldsville, Pa.
McCuddy, Charles Overton	(Sp. Agr.)	Oakville
McDaniel, John William	(Civ. 2)	Horse Cave
McDaniel, Lavinia Roy	(A. & S. 1)	Warsaw
McDaniel, Stephen	(Mech. 1)	Horse Cave
McDonald, John Warlick	(Agr. 4)	Louisville

McDonald, John William	(Law 2)	Lexington
McDougle, William Darnall	(Mech. 1)	Lexington
McFarland, Thomas Hampton	(Mech. 1)	Beech Grove
McCann, C. C.	(R. & H. E.)	Catlettsburg
McGlasson, Robert Thomas	(Agr. 2)	Burlington
McGovern, P. A.	(R. & H. E.)	Lexington
McGregor, Harold Bowers	(A. & S. 1)	Lexington
McGuffey, Earle Monroe	(Sp. A. & S.)	Barthell
McIntyre, Howard	(A. & S. 2)	Carlisle
McKee, H. Clay	(R. & H. E.)	Mt. Sterling
McKee, Thomas Forest	(Mech. 1)	Riverton
McKee, Walter Lindsay	(A. & S. 2)	Centreville, Miss.
McKee, W. R.	(R. & H. E.)	Mt. Sterling
McKenney, W. T.	(R. & H. E.)	Lexington
McKinney, Sidney Sims	(A. & S. 1)	Cadiz
McKorkle, Paul Moore	(Sh. Min. 1)	Kokomo, Indiana
McMurry, William	(Mech. 1)	Guthrie
McMurtrey, James Edward, Jr.	(Agr. 2)	R. R. 5, Bowling Green
McMurtry, Joseph Samuel	(Agr. 3)	Vine Grove
McMurtry, Mattie Brooks	(A. & S. 2)	Nicholasville
McNamara, Joseph Emmet	(Mech. 2)	Germantown
McNeill, Dee	(Law 3)	Hickman
McWhorter, John Frank	(A. & S. 1)	Springfield
Maclean, Robert Fitzhugh	(Civ. 3)	Baltimore, Md.
Macloskey, Louis Wallace	(Law 4)	Collingswood, N. J.
Maddox, John DaCosta	(Mech. 1)	Owensboro
Maddox, Harry Edward	(Mech. 1)	Mt. Carmel, Ohio
Madon, Everett	(10 Wks. Agr.)	Hartford
Mahoney, Ben	(Agr. 2)	R. R. 3, Lexington
Maloy, John Joseph	(Sh. Min.)	Bosworth
Marr, John Wesley	(Sp. Agr.)	Lexington
Marriott, LaFayette Sommers	(Civ. 2)	Elizabethtown
Marsh, John Robert	(A. & S. 3)	Maysville
Marshall, Daniel P.	(Sh. Agr. 2)	Lexington
Martin, E.	(R. & H. E.)	Paris
Martin, Edna Rodgers	(A. & S. 1)	Midway
Martin, Lillian Annette	(A. & S. 3)	Lexington
Martin, Marion Gordon	(Mech. 1)	Winchester
Martin, Richard Hale	(Sh. Min.)	Wilton
Martin, William C.	(A. & S. 2)	Lexington

Martin, William K.	(10 Wks. Agr.)	Brodhead
Matherly, C. Hartford	(Agr. 2)	Mackville
Mathews, Ruth Elizabeth	(A. & S. 1)	Lexington
Maupin, William Long	(Agr. 2)	Lexington
May, Joseph McKinster	(Mech. 3)	Prestonsburg
Mayer, Sidney Bernhardt	(Mech. 1)	Louisville
Mayes, Fred Overton	(A. & S. 1)	Rose Hill
Mayhew, Earl	(Agr. 2)	Barbourville
Maynard, Charles Ernest	(Mech. 1)	Elkton
Mayo, Walker Porter	(Law 3)	Lexington
Meade, Guy Benjamin	(Sh. Min.)	Williamsport
Meglone, A. T.	(R. & H. E.)	Harrodsburg
Meglone, Sarah	(A. & S. 1)	Paris
Mellen, Seth Baldwin	(Mech. 4)	Knoxville, Tenn.
Melton, Harry E.	(Mech. 3)	Danville
Melton, William Birdie	(Sh. Min.)	Providence
Melvin, James Cleveland	(Agr. 1)	Lynnville
Menefee, Kline Vespucius	(A. & S. 2)	Williamstown
Mercer, Alvis	(Sh. Min.)	Powderly
Merchant, G. B.	(R. & H. E.)	Lexington
Michot, Marie Louise	(A. & S. 3)	Louisville
Middleton, G. M.	(R. & H. E.)	Shelbyville
Middleton, James Adam	(Sp. A. & S.)	Greenville
Midkiff, Ivan Conrad	(Sp. Civ.)	Narrows
Miller, Bertha Klein	(A. & S. 1)	Lexington
Miller, Glenn Earl	(Sp. Law)	Warmack
Miller, Jean	(Sp. H. E.)	Lexington
Miller, LeRoy Robert	(Mech. 1)	Newport
Millner, W. F.	(R. & H. E.)	Louisville
Mills, John Christopher	(Sh. Min.)	Shamrock
Milward, Harry L.	(Mech. 1)	Lexington
Mitchell, Benjamin H.	(Agr. 3)	Eli
Mitchell, Katherine	(Agr. 3)	Bowling Green
Mitchell, Robert, Jr.	(Sh. Agr. 1)	Paducah
Mitchell, William C.	(Agr. 2)	Neba
Mobley, Walter E.	(Law 3)	Green
Monarch, Samuel Hudson	(Sp. Law)	Kirk
Monroe, Raleigh C.	(A. & S. 1)	Broadland, Ill.
Montgomery, Murray Mathews	(Mech. 2)	Madisonville, Tenn.
Moore, C. T.	(R. & H. E.)	Maysville
Moore, Elizabeth Graeme	(Agr. 4)	Louisville

Moore, James Homer	(Agr. 3)	Marion
Moore, Lee Stephens	(Law 2)	Central City
Moore, Virginia Banks	(Sp. H. E.)	Lexington
Moore, William Estill	(Min. 2)	Paris
Moore, William Shultz	(Mech. 2)	Hartford
Morgan, Charles Lee	(Agr. 1)	Sirocco
Morgan, Ralph Robert	(Agr. 4)	Covington
Morris, David Pritchard	(Agr. 2)	Calhoun
Morris, Helen Elizabeth	(A. & S. 1)	Lexington
Morris, James Monroe	(Law 4)	R. R. 1, Pembroke
Mott, G. F.	(R. & H. E.)	Catlettsburg
Muller, Mortimer Glover	(Agr. 1)	Lexington
Murray, Christopher Burnett	(A. & S. 2)	Adairville
Murphy, Robert Edward Lee	(Sp. Law)	Lexington
Myers, William Irvin	(Sh. Min.)	Stone
Nance, Gordon Bennett	(Agr. 2)	Kevil
Narisawa, Kenjiro	(Sp. Agr.)	Japan
Neagle, George Page	(Agr. 3)	R. R. 2, Smiths Grove
Neagle, Walter Cleveland	(Agr. 2)	Smiths Grove
Neale, James Myles	(Sh. Agr. 2)	Hickory
Nelson, Lecoq Herc	(Agr. 3)	Lexington
Neuhaus, Roy Ernest	(Mech. 2)	Moline, Ill.
NeVille, Minnie E.	(Sp. A. & S.)	Lexington
Newberry, George Ivy	(Agr. 1)	Fulton
Newman, Stanley Olive	(Agr. 1)	Louisville
Nichols, Jesse Bell	(Law 3)	Lexington
Nicholson, Christopher Pitman	(A. & S. 2)	Tinker
Nicholson, Fred William	(Sh. Agr. 1)	Henderson
Nickell, Ira M.	(Law 4)	Panama
Nieding, James McGinnis	(Law 4)	Salisbury, N. C.
Nisbet, Ben Louis	(Law 4)	Madisonville
Nisbet, Kenneth Rhea	(Mech. 1)	Earlington
Noe, James Cecil	(Sp. A. & S.)	Lexington
Noe, Sherod Stanfill	(Mech. 1)	Lexington
Noel, Henry L.	(Min. 4)	Newport
Noel, William Henry	(Min. 4)	Bellevue
Norris, James William	(Law 2)	Somerset
Northcutt, Johnst	(Law 2)	Burlington
Norton, E. R.	(R. & H. E.)	Harrodsburg
Nuckols, A. H.	(R. & H. E.)	Versailles
Nunan, Thomas R.	(Mech. 4)	Winchester

Nunnelly, Doty Lee	(Agr. 1)	Stamping Ground
O'Bannon, Lester Severance	(Mech. 4)	Stanford
O'Bryant, William	(Sh. Min.)	Mortons Gap
O'Neal, Younger Evans	(Law 4)	Middlesboro
Oglesby, Mary Elizabeth	(Agr. 1)	Shelbyville
Orme, George Rankin	(A. & S. 1)	Marion
Otto, H. F.	(Mech. 3)	Maysville
Owen, C. S.	(A. & S. 3)	Mayfield
Owen, J. C.	(Mech. 1)	Mayfield
Owen, Jesse Lewis	(Agr. 3)	Owensboro
Owens, John Stiles	(A. & S. 1)	Calhoun
Owsley, Warner Wellman	(Agr. 2)	Owensboro
Page, George Vernon	(Agr. 1)	Lynnville
Palmore, Regie Ellsworth	(Sh. Agr. 1)	Persimon
Park, Curtis F., Jr.	(Agr. 2)	R. R. 3, Richmond
Park, George Elliott	(A. & S. 1)	R. R. 3, Richmond
Park, James	(A. & S. 4)	R. R. 3, Richmond
Parker, Espie C.	(Mech. 4)	Lexington
Parker, Jessie B.	(A. & S. 1)	Midway
Parker, J. Sanders	(Civ. 2)	Sanders
Parker, Mary B.	(A. & S. 1)	Maysville
Parks, Harold	(Mech. 1)	Irvington
Parrigin, Homer Parks	(Mech. 3)	Mill Springs
Parrish, Roger Mills	(Civ. 4)	Scottsville
Payne, Ellen Douglas	(A. & S. 2)	Lexington
Payton, Leiton Early	(A. & S. 3)	Horse Cave
Peak, Bart Nixon	(A. & S. 2)	LaGrange
Peak, T. Ellis	(Mech. 1)	LaGrange
Pearlman, Reuben	(A. & S. 2)	Richmond
Pedley, Gracean McG.	(Agr. 3)	Owensboro
Peel, Dwight	(Agr. 1)	Benton
Peffer, Archie Xavier	(Agr. 4)	Somerset
Pendleton, Morris Eades	(Mech. 2)	Lexington
Penick, Everett Smith	(Law 3)	Elkton
Penn, Everett Sleet	(Mech. 2)	Georgetown
Pennington, Stella	(A. & S. 1)	London
Perry, Elizabeth Homer	(Agr. 2)	Lexington
Petrie, Charles John	(Agr. 4)	Fairview
Pettit, William	(Sh. Agr. 1)	Lexington
Pfingstag, Vivian Richard	(Agr. 2)	Newport
Phelps, David McCord, Jr.	(Civ. 3)	R. R. 4, Richmond

Phelps, Frank W.	(R. & H. E.)	Lexington
Phelps, Herman Wilson	(A. & S. 2)	Lexington
Phillips, Stanley	(A. & S. 2)	Narrows
Philpot, Norbourn Edward	(Mech. 4)	Owensboro
Pickett, Elizabeth Danforth	(Sh. H. E. 1)	R. R. 1, Finchville
Piggott, Walter Joseph, Jr.	(Agr. 4)	Irvington
Pilcher, Elmer Ellsworth	(Agr. 1)	Lexington
Pilcher, Nancy Fielding	(A. & S. 4)	Lexington
Pinsifull, Edward	(R. & H. E.)	Pineville
Pinsen, H. W.	(R. & H. E.)	Lexington
Pittman, Ernest Edgar	(Agr. 4)	Sedalia
Poindexter, J. R.	(R. & H. E.)	Cynthiana
Polin, J. O.	(R. & H. E.)	Springfield
Polin, Joseph	(R. & H. E.)	Springfield
Pollitt, Dorothy Ellen	(A. & S. 3)	Vanceburg
Poole, Henry Lewis	(Agr. 4)	Greenville
Porter, Charles Carr	(Sp. Mech.)	Shelbyville
Porter, William F.	(Sp. Civ.)	Winchester
Portwood, Bradley	(Sp. Civ.)	Lexington
Potter, Etta	(A. & S. 2)	Lexington
Potts, Floyd Wellman	(Agr. 2)	R. R. 5, Owensboro
Powell, Harry Jennings	(A. & S. 1)	Richmond
Powell, Henry Taylor	(Mech. 1)	Louisville
Powell, Lois	(Agr. 1)	Red House
Powell, Merritt Harber	(A. & S. 1)	Deland, Fla.
Powell, Tommie Alexander	(Agr. 1)	Sebree
Power, Douglas Robinson	(Mech. 1)	Flemingsburg
Prather, J. B.	(R. & H. E.)	Georgetown
Preston, Amos Charles	(Sp. Law)	Inez
Preston, Ernest Ray	(Agr. 2)	Paintsville
Preston, Sue	(Sh. Agr. 1)	Alphoretta
Prewitt, Ed Marshall	(Sp. Agr.)	Lexington
Price, Leonard C.	(A. & S. 2)	R. R., Lexington
Puckett, Roy Dee	(Mech. 4)	Hodgenville
Pulliam, Keel Gaines	(Mech. 3)	Lexington
Pulliam, Harold Arthur	(A. & S. 1)	Lexington
Purnell, Linda Bertram	(Sp. Agr.)	Middlesboro
Pursley, Ernest Raymond	(Mech. 3)	Hopkinsville
Puryear, Grover Cleveland	(Mech. 1)	Waverly
Queener, Jordan G.	(Sh. Min.)	Benham
Radford, William Tandy	(Mech. 2)	Hopkinsville

Radford, Bailey Allen	(Sp. Agr.)	Howell
Radford, William Whitfield	(Sh. Agr. 1)	Howell
Raht, Robert Edmiston	(10 Wks. Agr.)	Chattanooga, Tenn.
Rainey, C. S.	(Mech. 4)	Mt. Sterling
Ramsey, E. Homer	(Sh. Agr. 1)	R. R. 1, Slaughterville
Rankin ,Arthur Jinks	(Civ. 3)	Rankin
Rankin, Robert Bryan	(Agr. 2)	Rankin
Rankin, Vimont	(10 Wks. Agr.)	Visilia
Ratcliffe, J. E.	(R. & H. E.)	Newport
Ratican, Martine Catherine	(A. & S. 2)	Owensboro
Rawlings, John Thomas	(Civ. 2)	Newport
Rawlings, Robert Willard	(Civ. 2)	Newport
Rector, Lee Thornton	(A. & S. 1)	Oak Grove
Redd, Ruth Menefee	(Sp. A. & S.)	Lexington
Reddish, George Fultz	(Sh. Agr. 2)	Somerset
Redmon, John J.	(R. & H. E.)	Paris
Redwine, John Tennyson	(Law 2)	Sandy Hook
Redwine, Meredith	(Sp. Mech.)	Jackson
Redwine, Marcus Carlisle	(Law 3)	Sandy Hook
Reed, James Arthur	(Civ. 3)	Brownsville
Reiling, Charles	(R. & H. E.)	Louisville
Reusch, Louis, Jr.	(Agr. 1)	Bellevue
Reynolds, Jacob Owen	(Law 4)	Lexington
Reynolds, Joseph Carr	(Law 3)	Nicholasville
Reynolds, J. P. Goodson	(Agr. 1)	Lexington
Rhoads, Annie Laura	(Agr. 1)	R. R. 8, Lexington
Rhoads, Wayland	(Agr. 4)	R. R. 8, Lexington
Rice, Francis Leslie	(Min. 1)	Paintsville
Rice, Gustavus Adolphus	(Law 4)	Harlan
Rice, Than Givens	(Mech. 3)	Providence
Richards, Phil E.	(Agr. 4)	Morganfield
Richards, Thomas Theodore	(Agr. 1)	Morganfield
Richardson, Audrey Wood	(A. & S. 1)	Lexington
Richey, Robert Francis	(Agr. 1)	Newport
Ricketts, John Peter	(Agr. 2)	Mt Sterling
Ricketts, Mary Washington	(A. & S. 1)	Mt. Sterling
Rider, Esther	(A. & S. 4)	Rawletts
Riley, Bartley Jasper	(Agr. 1)	Kuttawa
Riney, W. G.	(R. & H. E.)	Owensboro
Ringo, Joseph Collis	(Law 3)	Lexington
Ringo, William Pryor	(Agr. 1)	Owensboro

Rivers, R. H.	(R. & H. E.)	Louisville
Robbins, Mabel	(Sp. A. & S.)	Paris
Roberts, Cary Russell	(Mech. 1)	Maceo
Roberts, Daniel Thomas	(A. & S. 4)	West Point
Roberts, Henry Jackson	(Sh. Agr. 2)	Dukedom, Tenn.
Robertson, Elmer Kranz	(Sp. Mech.)	Louisville
Robinson, Joseph Marcellus	(Mech. 1)	Lexington
Robinson, Lucy Erwina	(A. & S. 1)	Lexington
Robinson, Thomas Hart	(Law 4)	Winchester
Rochester, William Henry	(Agr. 1)	Marion
Rodes, Sarah Elizabeth	(A. & S. 3)	R. R. 8, Lexington
Rodes, William	(Sh. Agr. 1)	R. R. 8, Lexington
Rodman, John Hearst	(Agr. 2)	Owensboro
Rogers, George Clark	(Min. 4)	Lexington
Rogers, John	(Mech. 1)	Colesburg
Rogers, Joy B.	(Mech. 1)	Leitchfield
Rollings, Charles Smith	(Civ. 4)	La Center
Roney, James Givens	(Civ. 3)	Providence
Roth, Abraham Jacob	(Agr. 4)	Louisville
Roth, Bernard Wehle	(Agr. 4)	Louisville
Rountree, Bert T.	(Law 4)	R. R. 9, Smiths Grove
Ruby, Charles Ernest	(A. & S. 3)	Louisville
Rudolph, H. C.	(R. & H. E.)	Paducah
Rudy, James Wilson	(Law 2)	Sturgis
Rush, Lovel Feris	(A. & S. 1)	Tomkinsville
Russell, Buford B.	(Mech. 2)	Elkton
Russell, Hobart Stitzel	(Agr. 1)	Louisville
Russell, Louis Sterling	(Civ. 2)	Danville
Salisbury, Nell Howard	(Sh. H. E.)	Lexington
Sallee, Edna	(Sp. H. E.)	Danville
Sallee, William Merritt	(A. & S. 1)	Keene
Sandefur, Carl Pritchett	(Sh. Agr. 1)	Henderson
Sanders, I. W.	(R. & H. E.)	Vanceburg
Sandlin, Everett Hays	(Sp. A. & S.)	Richmond
Sandmann, Leo Joseph	(A. & S. 4)	Louisville
Sansom, Charles Arthur	(Mech. 2)	Russellville
Sattley, Jacob Slootskey	(A. & S. 1)	New York
Sauer, Clinton Bernard	(10 Wks. Agr.)	Glenview
Sauer, Robert Louis	(Mech. 1)	Louisville
Sayre, Mrs. Mary Lovell	(Sp. H. E.)	R. R. 5, Lexington
Searce, Richard Ward	(Agr. 3)	Lebanon

Schaber, Oscar	(A. & S. 1)	R. R. 2, Alexandria
Schirmer, Cal John	(Min. 2)	Ft. Thomas
Schoberth, Raymond Anthony	(Law 4)	Versailles
Schrader, Charles Christopher	(Mech. 2)	Philadelphia, Pa.
Schwant, Otto George	(Min. 2)	Covington
Schweers, Marguerite Elizabeth	(A. & S. 4)	Frankfort
Scott, Herschel	(Agr. 4)	Madisonville
Scott, J. L.	(Mech. 3)	Lair
Scott, J. Morris	(A. & S. 2)	R. R. 4, Fulton
Scott, Mary Taylor	(Agr. 1)	Lexington
Scott, R. M.	(R. & H. E.)	Greenup
Scott, Roy Cunningham	(A. & S. 2)	Lexington
Sellman, Lucy Eva	(Sh. H. E.)	Nicholasville
Server, James Milton	(Agr. 1)	Henderson
Settles, Grover Cleveland	(Agr. 4)	Lexington
Shepherd, Lucie Virginia	(A. & S. 2)	Fulton
Sherwood, John Stewart	(Law 1)	Cynthiana
Shinnick, William C.	(A. & S. 2)	Shelbyville
Shipp, John Van De-Graff, Jr.	(Min. 2)	Midway
Shobe, M. F.	(R. & H. E.)	Bowling Green
Shoemaker, Clarence Barbour	(A. & S. 4)	Falmouth
Short, Hardin Charles	(Sp. Law)	Huntington, W. Va.
Shouse, Gilbert Berry	(Civ. 3)	Salt Lick
Shropshire, John N.	(R. & H. E.)	Paris
Shultz, Collis Luther	(Agr. 1)	Narrows
Sims, Raymond Franklin	(Agr. 1)	Sedalia
Sims, Rubye Ethel	(Agr. 1)	Lynnville
Simpson, Henry Clay	(Agr. 1)	Lexington
Sinclair, Carl W.	(Law 3)	Georgetown
Skidmore, Robert Carlisle	(A. & S. 1)	R. R. 6, Lexington
Skillman, Avery Winston	(Sh. Agr. 1)	Lexington
Slade, Karl Prentice	(Sp. A. & S.)	Lexington
Sleet, Lyman Everette	(Sh. Agr. 2)	Lexington
Sloan, Anne Elizabeth	(A. & S. 1)	Lexington
Sloss, Zuingle M.	(Sh. Agr. 1)	Franklin
Smalley, B. B.	(R. & H. E.)	Harrodsburg
Smiser, H. Courtney	(Mech. 2)	Cynthiana
Smith, Charles Ball	(Agr. 2)	R. R. 4, Henderson
Smith, Charles R.	(Agr. 2)	Somerset
Smith, Clay Sulser	(A. & S. 3)	Maysville
Smith, George Rowe	(Law 4)	Central City

Smith, Glanton	(Mech. 2)	Ashland
Smith, Hoke Camp	(Mech. 1)	Louisville
Smith, John Warren	(Mech. 2)	Winchester
Smith, Newell Pemberton	(A. & S. 3)	R. R. 4, Henderson
Smith, Rebecca Washington	(A. & S. 3)	Paducah
Smith, Thomas	(R. & H. E.)	Lexington
Smith, W. Lee	(Law 3)	Sebree
Snoddy, William Owsley	(A. & S. 1)	Glasgow
Snodgrass, Erning Dennis	(Mech. 4)	Eminence
Snyder, Catherine Belt	(Sp. Agr.)	Louisville
Sothard, Mary	(A. & S. 1)	Middlesboro
Soule, William Nelson	(Sh. Agr. 1)	Paducah
Spalding, George Edward	(Agr. 1)	R. R., Springfield
Spanton, Elizabeth Searles	(Sp. A. & S.)	Lexington
Speck, Elsie Margaret	(Agr. 4)	Paducah
Spencer, Carlisle	(Law 3)	Catoosa, Tenn.
Spencer, Frances	(A. & S. 1)	Lexington
Spencer, William Ev.	(A. & S. 1)	Newport
Sprague, George Sidney	(A. & S. 3)	Lexington
Springer, David Sumner	(Mech. 2)	Corydon
Spurrier, J. W.	(R. & H. E.)	Owensboro
Stafford, Charley	(Sh. Min.)	Hellier
Stafford, Eva Hawes	(Agr. 1)	Louisville
Stafford, Frank	(Sh. Min.)	Hellier
Stagg, Mary Dedman	(A. & S. 2)	Lexington
Stallard, Harold Leighton	(A. & S. 1)	Louisville
Stamper, Anna Marie	(Sp. A. & S.)	Vanceburg
Stanley, Mamie Stoy	(A. & S. 1)	Bedford
Starks, R. M.	(R. & H. E.)	Sulphur
Stedman, Harvey Worley	(A. & S. 1)	Versailles
Steinhauser, Leo Ellis	(Agr. 1)	Demossville
Stephens, Charles Seymore	(Sp. Min.)	Lexington
Stephenson, O. L.	(R. & H. E.)	Paris
Stewart, John Gilbert	(Agr. 1)	Crittenden
Stewart, William Allen	(Sp. Law)	Minnie
Stokes, Silas Johnson	(Agr. 2)	Farmington
Stout, Virginia Dare	(A. & S. 1)	Owensboro
Stovall, H.	(R. & H. E.)	Colesbury
Stratton, George Stanley	(Agr. 1)	Bondville
Straus, Jacob	(R. & H. E.)	Hodgenville
Street, Frank Tandy, Jr.	(Agr. 2)	Cadiz

Stricker, Justine Augusta	(A. & S. 1)	Tuskahoma, Okla.
Stuart, William St. Clair	(10 Wks. Agr.	R. R. 1, Lexington
Sturgeon, William Henry	(Sp. Civ.)	Uniontown, Pa.
Sullivan, Kathleen Brennan	(Agr. 3)	Lexington
Sullivan, Mitchell S.	(Mech. 3)	Mt. Sterling
Sullivan, Wallace Dunlap	(Agr. 2)	Mt. Sterling
Sutton, Will D.	(Sp. Agr.)	Mayfield
Sweeny, Sunshine	(Agr. 3)	Lexington
Taber, John Branch	(Agr. 1)	Elizabethtown
Tanner, Carter Mills	(10 Wks. Agr.)	Barlow
Tashof, Ivan Poppers	(Law 3)	Lexington
Taul, Olive Wilkerson	(A. & S. 1)	Paris
Taylor, Claude B.	(Agr. 4)	Augusta
Taylor, Clyde P.	(A. & S. 4)	Whitesville
Taylor, Eugene Avery	(A. & S. 2)	Louisville
Taylor, James Henry	(Agr. 1)	Henderson
Taylor, J. S.	(R. & H. E.)	Frankfort
Taylor, Leonard De	(Agr. 1)	Louisville
Taylor, Lucien Wilbur	(A. & S. 1)	Elizaville
Taylor, Mildred	(A. & S. 1)	Lexington
Taylor, Reuben Thornton	(Mech. 4)	Lexington
Taylor, Robert Brooks	(A. & S. 4)	R. R. 5, Lexington
Taylor, Thomas Conway	(Mech. 3)	Greenville
Taylor, William R.	(Sp. Agr.)	Winchester
Terhune, D. R.	(R. & H. E.)	Harrodsburg
Terry, N. Norman	(Agr. 3)	Fulton
Thomas, Ad	(Agr. 2)	Liberty
Thomas, Allison	(A. & S. 1)	Cadiz
Thomas, Mary Josephine	(A. & S. 1)	Frankfort
Thomas, Richard Stokes	(Agr. 3)	Falmouth
Thomas, William Kenney	(Agr. 2)	R. R. 1, Muir
Thompson, E. P.	(R. & H. E.)	Paris
Thompson, Henry Clay, Jr.	(Min. 1)	Winchester
Thompson, Howard Neale	(Sp. Mech.)	R. R. 4, Richmond
Thompson, J. R.	(R. & H. E.)	Paducah
Thompson, James William	(Mech. 3)	Falmouth
Threlkeld, Elizabeth Scott	(Sp. Agr.)	Lexington
Threlkeld, Major E.	(A .& S. 1)	Clay
Timmer, Carl Albert	(Mech. 1)	Louisville
Tinkler, Robert Strong	(Agr. 2)	Atoka, Tenn.
Tipton, Presley H.	(A. & S. 3)	London

Tomkies, Toney Caperton	(Sp. Law)	R. R. 8, Lexington
Tomlinson, Robert Hugh	(A. & S. 1)	Lancaster
Torrence, Joseph Edmund	(Law 3)	Cynthiana
Townes, Fay Overton	(Agr. 3)	Madisonville
Treadway, Adli Stephen	(Sp. A. & S.)	Tanksley
Troutman, David Millard	(Mech. 2)	Shepherdsville
Turley, Edwin	(Agr. 1)	R. R. 1, Richmond
Turner, Charles Rogers	(Law 3)	Louisville
Turner, Dillard Hazelrigg	(A. & S. 1)	Frankfort
Turner, James David	(Mech. 1)	Lexington
Tuttle, William Preston	(Agr. 4)	Somerset
Tuttle, Margaret Helmsing	(Sp. A. & S.)	Lexington
Tye, W. M.	(R. & H. E.)	Barbourville
Underwood, Arthur R.	(Sp. A. & S.)	Lexington
Utterback, Wiley Griffey	(Sh. Agr. 2)	Clinton
VanArsdall, Julia Lashbrooke	(Agr. 3)	Flemingsburg
VanDeren, James Gordon	(Sp. Agr.)	R. R. 8, Cynthiana
VanHorn, W. E.	(R. & H. E.)	Lockwood
VanMeter, Margaret Baylor	(Sp. H. E.)	R. R., Lexington
Varnon, Martha Lunceford	(Sp. A. & S.)	Asheville, N. C.
Venable, Calvin Earl	(Sh. Agr. 1)	Bowling Green
Vest, James Wesley	(Civ. 3)	Berry
Vincent, Beverly M.	(Law 2)	Brownsville
Volinskey, Charles	(Sh. Min.)	Van Lear
Vanderhite, Norvin Tilden	(Sp. Agr.)	Louisville
Wade, J. T.	(R. & H. E.)	Catlettsburg
Wagner, Henry O.	(Mech. 4)	Mayfield
Walker, George Barkley	(Sp. C. E.)	Lexington
Walker, G. B.	(R. & H. E.)	Shelbyville
Walker, Mary Elizabeth	(Agr. 1)	R. R. 3, Lexington
Walker, Orin Coomer	(Sh. Agr. 2)	R. R. 2, Stithton
Walker, Mrs. T. L.	(Sp. A. & S.)	Lexington
Wallace, Ike B.	(Sp. Law)	Nicholasville
Wallace, Roy Alexander	(Agr. 3)	Cerulean
Walter, Edford Milton	(Mech. 4)	Blaine
Walters, William Phillip	(Sh. Min. 1)	Buffalo, N. Y.
Walton, John B.	(Sh. Agr. 2)	Burlington
Walton, William Pulaski, Jr.	(A. & S. 1)	Lexington
Ward, T. J.	(R. & H. E.)	Georgetown
Ware, Sim Louis	(Min. 2)	Somerset
Ware, William Wallace	(Sp. Agr.)	Hopkinsville

Warfield, William Christian	(Sh. Agr. 2)	R. R. 2, Pembroke
Warren, Anne Lois	(Sh. H. E.)	Lexington
Warren, J. P.	(R. & H. E).	Lexington
Warwick, George Withrow	(Mech. 3)	Frankfort
Wash, Fred Stanley	(Min. 3)	Midway
Waterfill, Robert William	(Mech. 1)	Lawrenceburg
Waters, John Newland	(Mech. 2)	Middletown
Waters, Robert Allen	(Agr. 1)	Springfield
Watkins, Harvey Worley	(Sp. Mech.)	Lexington
Watkins, James Rufus	(Civ. 4)	Lexington
Watkins, James Stephen	(Mech. 3)	London
Watson, Claude Columbus	(Mech. 3)	Georgetown
Watson, Mervin Lytle	(Mech. 1)	Brooksville
Weathers, M. E	(R. & H. E.)	Lexington
Webb, Earl Benton	(Law 3)	Willard
Webb, John Hal	(Law. 2)	Williamstown
Webb, Thomas Jackson	(Sp. Law)	Lackey
Wegert, Arthur Eugene	(A. & S. 4)	Louisville
Weikel, Harold Walton	(Sh. Agr. 1)	Louisville
Weilenman, Albert Henry	(Mech. 2)	Louisville
Welch, James Whitcomb	(A. & S. 1)	Nicholasville
Weldon, Elmer	(A. & S. 1)	Sanders
Wells, Marcus Linzie	(Sh. Min.)	Van Lear
Wells, Zephaniah	(Law 4)	Boone's Camp
Welsh, Marie Scott	(Sh. Agr. 1)	Lexington
Wesson, James Wright	(A. & S. 4)	Wingo
Whaley, Harry Wilbur	(Civ. 1)	Covington
Wheeler, Charles C.	(R. & H. E.)	Buechel
Wheeler, Kelley B.	(A. & S. 1)	West Liberty
Wheeler, Lloyd Tevis	(Sp. Civ.)	Louisville
Wheeler, Martin O.	(Law 4)	Paintsville
White, Elizabeth Elinor	(A. & S. 4)	Louisville
Whitehouse, Russell	(R. & H. E.)	Harrodsburg
Whitely, Fred	(Mech. 3)	Owensboro
Whitney, Mary Lovell	(Sp. H. E.)	Lexington
Whitson, James Harvey	(Mech. 2)	Verona
Whitworth, Annie Lewis	(A. & S. 3)	Hardinsburg
Whitworth, Clara Donald	(A. & S. 1)	Hardinsburg
Wicklund, Carl A.	(Agr. 2)	Central City
Wieman, Blanche Annette	(A. & S. 2)	Lexington
Wilder, Edward Daniel	(Sh. Agr. 1)	Louisville

Wiley, Wall	(Sh. Min.)	Lookout
Wilkerson, C. H.	(R. & H. E.)	Lexington
Wilkerson, Eugene Payne	(A. & S. 3)	Lexington
Wilkey, Clovis Roy	(Mech. 2)	Dixon
Willett, Orville Roberts	(A. & S. 3)	Elizabethtown
Williams, Buford	(Law 2)	R. R. 6, Lexington
Williams, Burton Force	(Civ. 3)	Athens
Williams, Edward Roberts	(Sp. Civ.)	Bowling Green
Williams, Franklin Price	(Agr. 3)	Frankfort
Williams, Harry Croft	(Law 4)	Auburn
Williams, Henry Chester	(Sh. Min.)	Baskett
Williams, Howard Coleman	(Civ. 3)	Lexington
Williams, Hilda Evelyne	(A. & S. 1)	Murray
Williams, James Herbert	(Agr. 2)	R. R. 1, Spottsville
Williams, James W.	(R. & H. E.)	Carlisle
Williams, John Cooper	(A. & S. 1)	Frenchburg
Williams, John Henry	(Law 3)	Cannel City
Williams, John Maurice	(A. & S. 1)	R. R. 6, Owensboro
Williams, Mary Sayre	(Sp. A. & S.)	Lexington
Williams, Noel Morgan	(A. & S. 3)	Russellville
Williams, Wendell Chartrand	(Civ. 1)	Owensboro
Williams, William Bernard	(Sp. Law)	Melburne, Aus.
Williamson, Adelia	(A. & S. 3)	Hopkinsville
Willis, Elizabeth C.	(Sp. A. & S.)	Lexington
Willis, Martha Stanton	(A. & S. 3)	Shelbyville
Willis, G.	(10 Wks. Agr.)	Winchester
Wilson, Grover Cleveland	(A. & S. 3)	Paint Lick
Wilson, James Henry, Jr.	(Sh. Agr. 1)	Eminence
Wilson, Robert Engene	(A. & S. 2)	R. R. 1, Sullivan
Wilson, Tilford Lanier	(Agr. 1)	Lexington
Wolf, Julius	(Mech. 3)	Lexington
Wood, Natalie Massie	(A. & S. 4)	Maysville
Wood, Robert E.	(R. & H. E.)	Louisville
Woodruff, Nata Lee	(A. & S. 3)	Eminence
Woods, Estill Dale	(A. & S. 2)	R. R. 1, Pinckard
Woodward, G. S.	(R. & H. E.)	Nicholasville
Wooten, Noel Combs	(A. & S. 1)	Hanson
Worick, William Rees	(Mech. 1)	Lebanon
Worsham, Herman	(Mech. 3)	Corbin
Worthington, John Wilbur	(Agr. 4)	R. R. 6, Owensboro
Wright, Elizabeth Thurman	(Sp. H. E.)	West Point

Wright, Floyd Holmes	(Sp. Agr.)	Liberty
Wright, Robert Bray	(A. & S. 1)	Springfield
Wright, Sidney Arthur	(Mech. 1)	Owensboro
Wright, Walter Lee	(Law 1)	Campbellsburg
Wyatt, Clinton P.	(A. & S. 1)	Benton
Yankey, J. S.	(R. & H. E.)	Springfield
Yarrington, John Alfred	(Mech. 1)	R. R. 3, Lexington
Yates, L. B.	(R. & H. E.)	Madisonville
Yoe, R. R.	(R. & H. E.)	Louisville
Young, Alfred Combs	(Agr. 4)	Elic
Young, Leving Perry	(Law 2)	Lexington
Zerfoss, Karl	(A. &. S. 3)	Ashland
Zimmerman, Alex Julius	(A. & S. 1)	Louisville
Zimmerman, Lenore C.	(Agr. 1)	Louisville

SUMMER SCHOOL STUDENTS, 1914.

Agee, Carl	R. R. 3, Paris
Agee, Mrs. Carl	R. R. 3, Paris
Alexander, Elizabeth Bell	Midway
Allen, Elvet Y.	Cromwell
Bailey, Chesley Williams	Madisonville
Barber, George Early	Owingsville
Barker, Clyde Russell	Brooksville
Barker, Virginia Elizabeth	Lexington
Barnes, Herbert C.	Maysville
Bassett, Luke Dye	R. R., Stamping Ground
Bell, Jeanette Torrance	Fulton
Bell, Katherine Florence	Lexington
Berkshire, Wm. Stewart	Petersburg
Bird, Horace P.	Shelbyville
Bleidt, Everett Price	R. R. 5, Lexington
Bolling, J. Esten	Louisville
Bridwell, E. Norah	Solitude
Brooks, Rexie	Murray
Brown, Robert Homer	Oneonta
Bruning, Walter Oscar	Louisville
Burns, Anna	R. R. 7, Paris
Burns, Pauline Conroy	Lexington
Campbell, David Patterson	Louisville
Campbell, George Francis	Butler

Campbell, Lucille Marie	Lexington
Cassidy, Alice Albro	Mt. Sterling
Castro, Idalina Oliveira	Portugal
Caywood, Logan Bentley	Hanly
Chalkley, Lyssa Desha	Lexington
Chambers, William Wayne	Gatliff
Chestnut, David Lee	Trenton
Childs, Elizabeth Beatrice	Maysville
Chorn, Sarah Marshall	R. R. 8, Lexington
Clark, Ernest Harold	Lexington
Clayton, Shirley C.	Murray
Cody, Tom Henry	Hindman
Coleman, James Henry	Oak Grove
Courtney, Samuel Newton	Owensboro
Crawley, Wm. Patrick	Louisville
Cregor, N. Minton	Springfield
Crowder, Orvel Wendel	Louisville
Cruickshank, Lucille H.	Lexington
Culver, Lola May	Corydon
Dale, Charles Sherman	Maysville
Davies, Paul Drummond	Lexington
Dix, Wm. Hewitt	Stephensport
Donohoo, David Dallas	Lexington
Downing, Harold Hardesty	Lexington
Drake, William Perry	Bowling Green
Duke, Spottswood Wellford	Lexington
Durham, Jerome Parker	Central City
Elliott, Alvin Clarence	Eubank
Elliott, Drusie	Paris
Elliott, Dennie David	Eubank
Foster, Richard Allen	Marion
Fugett, Early C.	Stamping Ground
Gelder, John Thomas	Rochester, N. Y.
Gerhard, Otto P.	Covington
Gilroy, Anna Belle	Lexington
Ginn, Mrs. Mary Franklin	Lexington
Gullion, Allen Wyant	Lexington
Haffler, Whayne Wilson	LaGrange
Hall, Elmer Dennis	Harlan
Hall, Jackye Thomas	Wickliffe
Hawkins, Robert Dawson	Lexington

Henry, Elizabeth Beatrice	R. R. 2, Lexington
Henry, William T.	Paris
Heyman, Laurence Jerome	Lexington
Hieatt, Martha Fox	R. R. 8, Lexington
Hill, Belva	Paris
Howard, Leah Kathleen	Owensboro
Huff, Aaron Baron	Lexington
Ihrig, Chester D.	Carntown
Ireland, Gatewood	LaGrange
Jacobs, Silas	Brooksville
Jefferson, Carlyle	Louisville
Johnson, Archibald Leonard	Tallega
Johnson, Mary Belle	Tallega
Johnstone, William Clarkson	R. R. 2, Nicholasville
Jones, Amy E.	Louisville
Jones, Je sie Milton	Monticello
Jones, Leslie Phillip	Sedalia
Jones, Otto Jefferson	Sedalia
Kaplan, Hyman Robert	Lexington
Kelley, James Otis	Whitesville
Kraemer, Albert John	Louisville
Kroft, Merritt Vincent	Lexington
Lacy, Edgar St. Clair	Lexington
Lail, Webb	Lexington
LaMaster, B. F.	New Castle
Lenihan, Margaret	Paris
Ligon, John McGarvey	Barbourville
Lindsay, John William	Covington
Love, Samuel Edwin	Montgomery, W. Va.
Lovell, Ormond Esh	Lexington
Lyon, Mary Allen	Lexington
McClure, Eugene Thomas	Gallup
McClure, Virginia Clay	Mt. Sterling
McCoy, Edward Malcolm	Lexington
McCormick, Emmett Artie	Owensboro
McCracken, Morris Leon	Louisville
McGuffey, Earle Monroe	Barthell
McKinney, Sidney Sims	Cadiz
McMurtrey, Jos. Samuel	Vine Grove
McNeill, Dee Lewis	Hickman
Marks, Sarah Powell	Lexington

Martin, William Curry	Lexington
Maupin, William Long	Lexington
May, Joseph McKinster	Prestonsburg
Mellen, Seth Baldwin	Knoxville, Tenn.
Melton, Harry E.	Danville
Mills, Vaught I.	Kenton
Mitchell, William C.	Bremen
Monarch, Samuel	Hardinsburg
Morris, Mrs. Molly	LaGrange
Morris, James Monroe	Pembroke
Murray, Christopher Burnett	Adairville
Nisbet, Ben Lewis	Madisonville
Noel, Henry Lewis	Bellevue
O'Dell, James William	Lewisburg
Parsons, Rhey Boyd	Mayfield
Pendleton, Morris Eades	Lexington
Pindell, Isaac	Lexington
Porter, Charles Carr	Shelbyville
Potts, Floyd Wellman	R. R. 5, Owensboro
Purnell, Mary Agnes	Millersburg
Pursley, Ernest Raymond	Hopkinsville
Quinn, Jennie	Lexington
Railey, Mrs. Sallie Thornton	Versailles
Reid, Homer Lloyd	Lexington
Reynolds, Joseph Carr	Nicholasville
Rice, Gustavus Adolphus	Harlan
Rice, Than Givens	Providence
Rider, Esther L.	Rawletts
Robbins, Mabel	Paris
Robinson, Bessie	Lexington
Robinson, Nannie Louise	Mt. Sterling
Robinson, Thomas Hart	Winchester
Roberts, Rose Jane	Louisville
Rowe, Ernest Perry	Island
Schaber, Herbert	Hawthorne
Scott, Jas. Morris	R. R. 4, Fulton
Shouse, Gilbert Berry	Salt Lick
Smith, John Warren	Winchester
Smith, Martha Adalaide	Millersburg
Smith, Perry Grover	Lewisburg
Spencer, Frances Boyle	Lexington

Spencer, Mary Scott	Lexington
Spencer, Will Ev.	Newport
Stagg, Mary Dedman	Lexington
Stearns, Dudley H.	Williamstown
Stephens, Charles Seymore	Lexington
Stephenson, Charles Isaac	Louisville
Stokes, Silas Johnson	Farmington
Sullivan, Kathleen	Richmond
Sund, Aaron Walter	Tempe, Arizona
Taylor, Thomas Conway	Greenville
Todd, James Madison	Lexington
Todd, Ross McDowell	Lexington
Tomkies, Toney Caperton	R. R. 8, Lexington
Umstead, Stanley Milward	Lexington
Vierling, Frank	Lexington
Wagner, Henry O.	Mayfield
Wegert, Arthur Eugene	Louisville
Wilkirson, Eugene Payne	Lexington
Willett, Orville Roberts	Elizabethtown
Young, William T.	Guthrie

SUMMARY.

OFFICERS OF INSTRUCTION.

Professors	43
Associate Professors	13
Assistant Professors	21
Assistants and Instructors	21
University Officers of Instruction	98

STUDENTS.

Candidates for Degrees.	Arts and Science.	Agriculture.	Civil Eng.	Mech. Eng.	Mining Eng.	Law.	Total
Graduate Students	21	6	11	11	2	5	56
Seniors	41	42	12	36	4	29	164
Juniors	63	39	17	29	3	29	180
Sophomores	61	58	18	54	10	32	233
Freshmen	106	106	15	80	6	5	318
	292	251	73	210	25	100	951
Not Candidates for Degrees.							
Special Students	33	55	7	14	2	20	131
Two Year Agriculture		59					59
Ten Weeks Course in Agr.		25					25
Rural & Highway Engineering			129				129
Short Mech. Engineering				2			2
Short Mining Eng.					2		2
Eight Weeks Course in Min.					49		49
Summer School							167
	33	139	136	16	53	20	564
Totals	325	390	209	226	78	120	1515
Less Names Counted Twice							97
Total Enrollment							1418

SUMMARY BY COUNTIES IN KENTUCKY.

Adair County	1	Grayson County	4
Allen County	1	Green County	2
Anderson County	11	Greenup County	4
Ballard County	5	Hancock County	2
Barren County	3	Hardin County	11
Bath County	4	Harlan County	6
Bell County	9	Harrison County	17
Boone County	12	Hart County	8
Bourbon County	33	Henderson County	13
Boyd County	13	Henry County	15
Boyle County	3	Hickman County	2
Bracken County	9	Hopkins County	18
Breathitt County	1	Jackson County	2
Breckinridge County	10	Jefferson County	89
Bullitt County	5	Jessamine County	21
Caldwell County	2	Johnson County	9
Calloway County	8	Kenton County	14
Campbell County	26	Knott County	5
Carlisle County	5	Knox County	14
Carroll County	6	Larue County	2
Carter County	2	Laurel County	7
Casey County	4	Lawrence County	9
Christian County	17	Lee County	4
Clark County	12	Letcher County	1
Clay County	2	Lewis County	7
Clinton County	1	Lincoln County	1
Crittenden County	6	Livingston County	3
Daviess County	52	Logan County	12
Edmonson County	5	Lyon County	2
Elliott County	3	Madison County	26
Fayette County	273	Marion County	9
Fleming County	12	Marshall County	4
Floyd County	6	Martin County	2
Franklin County	18	Mason County	22
Fulton County	13	McCracken County	17
Gallatin County	3	McCreary County	3
Garrard County	8	McLean County	5
Grant County	9	Meade County	3
Graves County	19	Menefee County	1

Mercer County	11	Scott County	17
Monroe County	2	Shelby County	18
Montgomery County	17	Simpson County	8
Morgan County	9	Spencer County	1
Muhlenburg County	18	Todd County	7
Nelson County	2	Trigg County	7
Nicholas County	6	Trimble County	7
Ohio County	18	Union County	10
Oldham County	7	Warren County	10
Pendleton County	12	Washington County	16
Perry County	1	Wayne County	6
Pike County	6	Webster County	18
Powell County	1	Whitley County	8
Pulaski County	12	Woodford County	34
Rockcastle County	3		
Russell County	2	Total	1322

SUMMARY BY OTHER STATES AND COUNTRIES.

Alabama	2	Missouri	5
Arizona	1	New Hampshire	1
Arkansas	1	New Jersey	1
Australia	1	New York	7
China	1	North Carolina	3
Colorado	1	Ohio	3
England	1	Oklahoma	1
Florida	3	Pennsylvania	8
Germany	1	Philippine Islands	4
Illinois	10	Portugal	1
Indiana	2	Russia	1
Iowa	1	Tennessee	16
Japan	1	Texas	2
Kansas	2	Turkey	1
Maryland	2	Virginia	1
Mississippi	3	West Virginia	6
Minnesota	1	Wisconsin	1
		Total	96

DIRECTORY OF OFFICERS.

Numbers in Parentheses are Telephone Numbers.

ALLEN, J. EMBRY, Assistant Professor.
365 Aylesford Place (472)
ALLEN, ROBERT McDOWELL, Professor.
Preston Inn, (2267)
ANDERSON, FREDERICK PAUL, Dean.
147 Kentucky Ave., (941)
ANDERSON, WALTER S., Asst. Prof.
Experiment Station.
149 Washington Ave., (1563-X)
ANDERSON, WILLIAM LAURENCE, Prof.
306 Grosvenor Ave., (1129-Y)
AVERITT, SAXE DABNEY, Chemist.
Experiment Station.
304 East Maxwell Street.
BACON, PHILIP E, Tester of Dairy Herds.
Experiment Station.
Experiment Station.
BAKER, GEORGE M., Associate Professor.
701 S. Limestone.
BARKER, HENRY STITES, President.
Patterson Hall, (1239)
BARR, THOMAS JAMES, Professor.
454 Rose Lane, (2194-X)
BAXTER, JESSE VERNON, Engineer.
342 Columbia Ave.
BEDFORD, M. HUME, Instructor.
Paris, Ky.
BITNER, RALPH EMERSON, Instructor.
241 S. Limestone (986-Y)
BOHANNON, CHARLES D., Assoc. Prof.
522 Sayre Avenue (2739-X)
BOYD, PAUL PRENTICE, Professor.
Waller Avenue, Rodes Place (2582-Y)
BROWN, LINWOOD ARNOLD, Chemist.
Experiment Station.
425 Transylvania Park (1356-X)
BRUECKNER, ARTHUR LOUIS, Assistant.
Experiment Station.
819 South Limestone.
BRUMAGE, ALPHA, Professor.
414 Aylesford Place (2693-X)
BRYANT, THOMPSON RIPLEY, Professor.
221 Ashland Avenue (1612)
BUCKMAN, RUBY, Assistant Professor.
239 South Limsetone (1150)
BUCKNER, GARRETT DAVIS, Chemist.
Experiment Station.
462 North Limestone (1009)
BUSH, JAMES RICHARD, Assoc. Professor.
248 Ashland Avenue (2174)
BUTT, WILLIAM E., Assistant.
412 Woodland Avenue.
CANNON, HARRY S., Assistant.
123 East Maxwell.

CARMODY, JOHN HENRY, Asst. Prof.
Experiment Station.
239 South Limestone (3219)
CASSIDY, PERRY ROGAN, Asst. Prof.
169 Kentucky Avenue (914)
CARREL, WILLIAM JOSEPH, Assoc. Prof.
371 Linden Walk.
CHALKLEY, LYMAN, Professor.
148 East Fifth Street (2338-Y)
CHINN, AUBYN, Assistant Professor.
355 North Broadway (1097)
CHORN, SARAH, Instructor.
Nicholasville Pike (367)
CRISLER, OTTO S., Asst. Exp. Sta.
239 South Limestone (3219)
CURTIS, HENRY ERNEST, Professor.
355 Linden Walk (2908)
CURTIS, JOHN JAMES, Assistant Professor.
Y. M. C. A. Building (226)
DANIELS, LLOYD CADIE, Asst. Professor.
237 West Second Street (556)
DANTZLER, LEHRE LIVINGSTON, Prof.
259 Rodes Avenue (1741-Y)
DAVIES, HYWEL, Auditor.
227 Rodes Avenue (2296-Y)
DAVIS, JOSEPH MORTON, Professor.
340 Madison Place (1483)
DICKER, JOHN BORN, Instructor.
122 Graham Avenue.
DICKER, JOSEPH, Supt. of Shops.
199 Virginia Avenue.
DIDLAKE, MARY LEGRANDE, Asst. Prof.
481 East Main Street (234-Y)
DOUBLEDAY, RALPH S., Instructor.
609 South Limestone (582)
DOWNING, HARRY HARDESTY, Asst. Prof.
158 North Ashland Avenue (820)
DUNCAN, JAMES RAY, Instructor.
429 Maple Avenue.
EGBERT, CLARENCE, Supervisor Printing Department.
614 Central Avenue (1784-Y)
EWAN, AVERY EARLY, Supt. of Exp. Field, Experiment Station.
315 East Maxwell Street (1604)
FARQUHAR, EDWARD FRANKLIN, Prof.
629 Sayre Avenue (2079-Y)
*FARRA, JAMES A., Assistant Professor.
459 West Sixth Street.
FRANKEL, LEON KAUFMAN, Professor.
324 Aylesford Place (1891)
FREEMAN, WILLIAM EDWIN, Professor.
Waverly Apts., Hampton Court (2571)
GARMAN, HARRISON, Professor.
638 South Limestone.

GEORGER, EDWIN L., Instructor.
609 South Limestone (582)
GILBERT, ALFRED HOLLEY, Assoc. Prof.
609 South Limestone (582)
GILLIS, EZRA L., Registrar.
287 South Limestone (2307-Y)
GOOD, EDWIN STANTON, Professor.
Experiment Station Farm (1659-Y)
GORDON, ANGUS NEAL, Instructor.
180 East Maxwell Street (699-X)
GOTT, EDWIN JOSEPH, Asst. Exp. Sta.
819 South Limestone.
GRADDY, LIZZIE LEE, Asst. Registrar.
215 East High Street (2077-X)
GRAHAM, ROBERT, Professor.
239 South Limestone (3219)
GREHAN, ENOCH, Professor.
702 East Main Street (1124)
HALL, EDWARD L., Y. M. C. A. Gen. Secty.
Waller Avenue, Rodes Place (2167-Y)
HAMILTON, ANNA J., Associate Professor and Dean of Women.
Patterson Hall (24)
HEALY, DANIEL JOSEPH, Professor.
530 Sayre Avenue (969)
HOFMANN, FRED WENZL, Asst. Prof.
Experiment Station.
Station Farm (2817)
HOLLCROFT, TEMPLE RICE, Instructor.
327 South Upper Street (655)
HOOPER, JOHN JULIAN, Professor.
609 South Limestone (582)
HORINE, JOHN SHERMAN, Asst. Prof.
535 South Limestone.
HUSTON, ED., Asst., Experiment Station.
149 Virginia Avenue (2200)
INGRAM, ELMER, Chief Inspector, Exp. Sta.
Experiment Station.
JEWETT, HOWARD HERMAN, Research Assistant, Experiment Station.
424 Linden Walk (1354)
JONES, ROGER WALTER, Inspector, Experiment Station.
336 Madison Place (1031-X)
JONES, THEODORE TOLMAN, Professor.
318 Aylesford Place (1812)
KARRAKER, PERRY ELMER, Asst. Prof.
327 South Upper Street (655)
KASTLE, JOSEPH HOEING, Dean.
238 East Maxwell Street (2282)
KELLY, MERVIN JOE, Instructor.
412 Linden Walk (787-X)
KERR, CHARLES, Professor.
658 North Broadway (431-X)
KILLEBREW, CINCINNATUS DECATUR, Associate Professor.
287 South Limestone (2307-Y)
KING, MARGARET I., Librarian.
225 South Limestone (1827-X)
KINNEY, EDMUND J., Associate Professor.
465 Woodland Avenue (1542-Y)
LABACH, JAMES OSCAR, Professor.
Preston Inn (1192)
LAFFERTY, WILLIAM THORNTON, Dean.
418 East Maxwell Street (1080)
LYONS, JAMES B., Cashier.
507 Maryland Avenue (1234)
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366 Transylvania Park (1813-Y)
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312 South Upper Street (1787-Y)
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217 Arlington Avenue (1492-X)
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NUTTER, JOHN WILLIAM, Superintendent Dairy Farm, Experiment Station.
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157 Forest Avenue (1466-Y)
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Scovell Place, Station Farm (1462-X)

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326 Harrison Avenue (1236-X)
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340 Transylvania Park (2025-Y)
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226 Rodes Avenue (2576)
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347 Transylvania Park (795-Y)
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429 Transylvania Park (2693-Y)
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354 Linden Walk (2004-Y)
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306 Grosvenor Avenue (1129-Y)
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