CATALOGUE

OF THE

STATE
UNIVERSITY OF KENTUCKY

FOR THE

SESSION ENDING JUNE 6, 1913

LEXINGTON
PUBLISHED BY THE UNIVERSITY
APRIL, 1913

239

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1913

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UNIVERSITY CALENDAR.

1913.

January 6,	Monday,	Second Term begins.
February 22,	Saturday,	Washington's Birthday.
February 22,	Saturday,	Union Literary Society Contest.
February 27,	Thursday,	Tri-State Law Debating Ass'n Contest.
March 26,	Wednesday,	Patterson Literary Society Contest.
April 25,	Friday,	Arbor Day.
May 26,	Monday,	Final Examinations for the three lower classes.
June 1,	Sunday,	Baccalaureate Sermon.
June 3,	Tuesday,	Board of Trustees meets.
June 4,	Wednesday,	Class Day.
June 4,	Wednesday,	Alumni Banquet.
June 5,	Thursday,	Commencement.
June 10,	Tuesday,	Summer School opens.
June 10,	Tuesday,	Registration for Summer School.
June 19, 20,	Thursday, Friday,	High School Conference.
June 10 to Aug. 1,		Special Lecture each day at 10 o'clock.
August 2,	Saturday,	Summer School closes.
Sept. 15, 16, 17,	Mon., Tues., Wed.,	Examinations for Entrance.
Sept. 15, 16, 17,	Mon., Tues., Wed.,	Examinations to remove conditions.
Sept. 15, 16, 17,	Mon., Tues., Wed.,	Registration.
September 18,	Thursday,	First Term begins.
October 10,	Friday,	Alumni Reception to new students.
October 31,	Friday,	University Reception to all students.
November 27,	Thursday,	Thanksgiving.
November 28,	Friday,	Alumnae Luncheon.
December 9,	Tuesday,	Board of Trustees meets.
December 24,	Wednesday,	Christmas Holidays begin.

1914.

January 6,	Tuesday,	Second Term begins.
February 21,	Saturday,	Union Literary Society Contest
February 22,	Sunday,	Washington's Birthday.
March 26,	Thursday,	Patterson Literary Society Contest.
April 24,	Friday,	Arbor Day.
May 25,	Monday,	Final Examinations for the three lower classes.
May 31,	Sunday,	Baccalaureate Sermon.
June 2,	Tuesday,	Board of Trustees meets.
June 3,	Wednesday,	Class Day.
June 3,	Wednesday,	Alumni Banquet.
June 4,	Thursday,	Commencement.

SOCIETY MEETINGS.

Monday at 7:30 each week.....Henry Clay Law Society.
Monday at 7:30 each week.....Agricultural Society.
First Tuesday each month.....Horace Mann Society.
First week of the month, Monday, 4.00 P. M., other weeks Wednesday, 3.30 P.M...Mathematical Society.
Once each Term.....History Society.
Alternate Fridays at nine o'clock.....The American Society of Mechanical Engineers.
Alternate Fridays at nine o'clock.....The American Institute of Electrical Engineers.
First Tuesday each month at eight o'clock P. M., and third Monday each month at 11:30 A. M.....The Faraday Society.
Alternate Saturdays from eight to ten and from ten to twelve o'clock A. M.....The Mechanicals First Society
Saturday at 7.30 each week.....Union Literary Society meet
Saturday at 7.00 each week.....Patterson Literary Society

SCHEDULE OF ENTRANCE EXAMINATIONS.

1913.

	Monday, Sept. 15	Tuesday, Sept. 16	Wednesday, Sept. 17
Algebra		11– 1 P. M.	9–11 A. M.
Astronomy	9–10 A. M.		8– 9 A. M.
Botany	10–11 A. M.		10–11 A. M.
Chemistry	11– 1 P. M.		9–11 A. M.
Civics		8– 9 A. M.	
Drawing		9–10 A. M.	
English	11– 1 P. M.		11– 1 P. M.
French	11– 1 P. M.		11– 1 P. M.
Geometry (Plane)	3– 5 P. M.	9–11 A. M.	
Geometry (Solid)		3– 5 P. M.	3– 5 P. M.
German		3– 5 P. M.	3– 5 P. M.
Greek	8–10 A. M.	8–10 A. M.	
History	9–11 A. M.		8– 9 A. M.
History (American)		9–10 A. M.	9–10 A. M.
Latin		3– 5 P. M.	3– 5 P. M.
Manual Training		3– 5 P. M.	3– 5 P. M.
Physical Geography		3– 5 P. M.	3– 5 P. M.
Physics		9–11 A. M.	9–11 A. M.
Physiology		9–10 A. M.	9–10 A. M.
Trigonometry	9–11 A. M.		11– 1 P. M.
Zoology		3– 5 P. M.	

Part I.

OFFICERS OF ADMINISTRATION AND INSTRUCTION.

THE BOARD OF TRUSTEES.

OFFICERS.

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

EXECUTIVE COMMITTEE.

CHARLES B. NICHOLS, Chairman.
HON. CASSIUS M. CLAY, CLAUDE B. TERRELL,
HYWEL DAVIES, RICHARD C. STOLL.

EX-OFFICIO MEMBERS.

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

APPOINTED BY THE GOVERNOR.

Names and Addresses	*Term Expires*
HON. CASSIUS M. CLAY, Paris	January, 1914
HYWEL DAVIES, Kensee	January, 1914
RICHARD C. STOLL, Lexington	January, 1914
LOUIS L. WALKER, Lancaster	January, 1914
RICHARD N. WATHEN, Lebanon	January, 1914
HON. JAMES BREATHITT, Hopkinsville	January, 1916
THOMAS LEWIS EDELEN, Frankfort	January, 1916
CHARLES B. NICHOLS, Lexington	January, 1916
JAMES K. PATTERSON, Lexington	January, 1916
JAMES W. TURNER, Paintsville	January, 1916
ROBERT W. BROWN, Louisville	January, 1918
HON. TIBBIS CARPENTER, Scottsville	January, 1918
HON. WILLIAM H. COX, Maysville	January, 1918
DENNY P. SMITH, Cadiz	January, 1918
HON. CLAUDE B. TERRELL, Bedford	January, 1918

LIST OF STANDING COMMITTEES
OF THE FACULTY

Entrance Requirements and Accredited Schools. Rhoads, Noe and Jones.

Courses of Study. Deans of the Colleges, Professor Anderson, Chairman.

Calendar and Bulletins. Boyd, Lafferty, Dantzler and Gillis.

Graduate School. Mackenzie, Chalkley, Frankel, Tuthill and Tuttle.

Examinations and Daily Schedule. Melcher, Mathews, Freeman, Boyd, Dantzler.

Discipline. Mathews, Gullion, Hooper and D. Terrell.

Student Welfare. Miss Hamilton, Pryor, Good and Melcher.

Commencement Exercises. Mrs. Stout, Anderson, Lafferty and Gullion.

Student Publications. Farquhar, Allen and Bohannan.

Athletics. Gillis, Curtis and Weaver.

Entertainments Non-Athletic. Zembrod, Lafferty, Miss Hamilton, Freeman, Gullion.

Student Organizations. Pryor, Chalkley, Jones and Carrel.

Library. G. Terrell, Pres. Barker, Vice-Pres. White, Norwood, Tuthill and Miss Hamilton.

Student Fees. Pence, Roberts and Tuttle.

Buildings and Grounds—University—Patterson Hall. Frankel, Garman and Lafferty.

Military. Gullion, Peter and Freeman.

University Publicity. Lafferty, Hooper, Gillis and Turner.

Chapel Exercises. Miss Hamilton, Mathews, Zembrod, Noe and Davis.

Advanced Standing. Noe, Melcher and Davis.

The President and Vice-President are ex-officio members of all committees.

ADMINISTRATIVE OFFICERS.

HENRY STITES BARKER, LL. D., President.

THE COUNCIL OF ADMINISTRATION.

HENRY STITES BARKER, LL. D., President.

JAMES GARRARD WHITE, A. M., Vice-President, Dean of Men and Professor of Mathematics.

FREDERICK PAUL ANDERSON, M. E., Dean of the College of Mechanical and Electrical Engineering and Professor of Mechanical Engineering.

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

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.

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

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

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

ALEXANDER ST. CLAIR MACKENZIE, M. A., LL. D., F. R. S. L., Dean of the Graduate School and Professor of English and Comparative Literature.

GENERAL ADMINISTRATIVE OFFICERS.

OFFICE OF THE PRESIDENT.

HENRY STITES BARKER, LL. D., President.

KATHERINE W. OWENS, Assistant Secretary.

OFFICE OF THE COMPTROLLER.

WILLIAM T. LAFFERTY, A. M. Comptroller.

CALVIN BRICE LENAGHAN, Bookkeeper.

JAMES B. LYONS, Cashier.

OFFICE OF THE REGISTRAR.

EZRA L. GILLIS, A. B., Registrar.
LIZZIE LEE GRADDY, Assistant Registrar.
LILA BEATRICE TERRY, A. B., Clerk.
DOLLIE TAYLOR BATTAILE, B. S., Clerk. (Part Time)

OFFICE OF THE DEAN OF MEN.

JAMES GARRARD WHITE, A. M., Dean.

OFFICE OF THE DEAN OF WOMEN.

ANNA JACKSON HAMILTON, M. A., Dean.

THE UNIVERSITY LIBRARY.

MARGARET I. KING, A. B., Librarian.

ADDIE LEE DEAN, A. B., Assistant Librarian.

HAROLD LEIGHTON STALLARD, Assistant Librarian.

OFFICERS OF INSTRUCTION.

PROFESSORS.

HENRY STITES BARKER, LL. D., President.....Patterson Hall

JAMES GARRARD WHITE, A. M., Vice-President.....158 E. Maxwell
Professor of Mathematics.

JOSEPH WILLIAM PRYOR, M. D.....261 N. Broadway
Professor of Anatomy and Physiology.

FREDERICK PAUL ANDERSON, M. E.....147 Kentucky Ave.
Dean of the College of Mechanical and Electrical Engineering and Professor of Mechanical Engineering.

CLARENCE WENTWORTH MATHEWS, B. S. .....660 South Limestone
Professor of Horticulture and Botany and Chief of Division of Horticulture, Experiment Station.

ARTHUR MCQUISTON MILLER, A. M.....609 South Limestone
Dean of the College of Arts and Science and Professor of Geology.

MERRY LEWIS PENCE, M. S.....364 Merino St.
Professor of Physics.

ALEXANDER ST. CLAIR MACKENZIE, M. A., F. R. S. L., 463 West Sixth St.
Dean of the Graduate School and Professor of English and Comparative Literature.

CHARLES JOSEPH NORWOOD, M. S.....339 Aylesford Place
Dean of the College of Mines and Metallurgy and Professor of Mining and Metallurgy.

ALFRED CHARLES ZEMBROD, A. M.....456 West Fourth
Professor of Modern Languages.

FRANKLIN ELLIOTT TUTTLE, M. A., Ph. D.....125 E. Maxwell
Professor of Chemistry.

WALTER ELLSWORTH ROWE, C. E.....347 Transylvania Park
Dean of the College of Civil Engineering and Professor of Civil Engineering.

LEON KAUFMAN FRANKEL, M. E.....324 Aylesford Place
Professor of Machine Design.

WILLIAM THORNTON LAFFERTY, A. M.....418 E. Maxwell St.
Dean of the College of Law.

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

JOHN JULIAN HOOPER, M. S. A.....609 S. Limestone
Professor of Animal Husbandry and Chief of Division of Animal Husbandry. (*Dairy Cattle, Horses and Poultry.*)

RALPH NELSON MAXSON, Ph. D.....366 Transylvania Park
Professor of Inorganic Chemistry.

GEORGE ROBERTS, B. Ped., M. S.....340 Transylvania Park
Chief of Division of Agronomy, Experiment Station, and Professor of Agronomy.

THEODORE TOLMAN JONES, A. M.....119 Washington Ave.
Professor of Latin.

*GLANVILLE TERRELL, A. B., Ph. D.....609 S. Limestone
Professor of Greek.

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

HARRISON GARMAN, D. Sc.....638 S. Limestone
Professor of Entomology and Zoology and Chief of Division of Entomology and Botany, Experiment Station.

COLUMBUS RUDOLPH MELCHER, A. M....Hanover Flats, Hampton Court
Professor of German and French.

JAMES THOMAS COTTON NOE, A. M.....321 Linden Walk
Professor of Education.

ALFRED MEREDITH PETER, M. S., F. A. A.....268 Maxwell St.
Professor of Soil Technology and Chief of Division of Chemistry in the Experiment Station.

HENRY ERNEST CURTIS, M. S.....355 Linden Walk
Chief of Fertilizer Division, Experiment Station.

ROBERT MCDOWELL ALLEN, A. B.....421 Third Street
Chief of Food and Drug Division, Experiment Station.

---

*On leave of absence.

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

JOB DARBIN TURNER, B. Ped., LL. B.....135 Washington Ave.
Chief of Feed Division, Experiment Station.

EDWIN STANTON GOOD, M. S.....Experiment Station Farm
Chief of Animal Husbandry Division (Beef, Cattle and Swine), Experiment Station.

LINWOOD ARNOLD BROWN, Ph. D., Ph. C., F. A. A., 425 Transylvania Park
Drug Chemist, Experiment Station.

DANIEL JOSEPH HEALY, M. D., C. M.....530 Sayre Avenue
Professor of Bacteriology, Experiment Station.

FRANK MACY SURFACE, Ph. D.....634 Loudon Ave.
Professor of Biology, Division of Animal Husbandry (Beef, Cattle, Sheep and Swine), Experiment Station.

JAMES EDWARD TUTHILL, Ph. D.....253 South Limestone
Professor of History and Political Economy.

*ROBERT CRAIG TERRELL, C. E.....Frankfort, Kentucky
Professor of Rural and Highway Engineering.

HARRY DRAPER EASTON, B. S., E. M.....430 Transylvania Park
Professor of Mining Engineering.

MCHENRY RHOADS, A. M., Ph. M.....Nicholasville Pike
Professor of Secondary Education.

LYMAN CHALKLEY, LL. B.....Preston Inn
Professor of Law.

WILLIAM EDWIN FREEMAN, A. B., B. M. E.....239 S. Limestone
Professor of Electrical Engineering.

JOHN JAMES TIGERT, B. A. (Oxon).....320 E. Maxwell St.
Professor of Philosophy and Education.

CHARLES KERR.....658 North Broadway
Professor of Law.

PAUL PRENTICE BOYD, M. A., Ph. D.....326 Harrison Ave.
Professor of Mathematics.

*On leave of absence.

THOMSON RIPLEY BRYANT, B. S. in Agr.....152 E. High
Superintendent of Extension Work, Agricultural College, Chief of Extension Division, Experiment Station.

HENRY HARRISON STRAUSS, A. M.....609 South Limestone
Acting Professor of Greek.

ALLEN WYANT GULLION, A. B.,
Commandant's House, University Campus
First Lieutenant, U. S. A., Commandant and Professor of Military Science and Tactics.

DANIEL VOIERS TERRELL, B. C. E.....287 South Limestone
Acting Professor of Highway Engineering.

*EDWIN REGUR SWEETLAND, B. S. A., Ph. M., LL. B., 236 Rodes Ave.
Director of Athletics.

JOSEPH MORTON DAVIS, A. M.....340 Madison Place
Professor of Mathematics.

ASSOCIATE PROFESSORS.

WILLIAM JOSEPH CARREL, B. S., C. E.....371 Linden Walk
Associate Professor of Civil Engineering.

ANNA J. HAMILTON, M. A.....Patterson Hall
Dean of Women, Associate Professor of English.

JAMES RICHARD BUSH, A. B.....248 Ashland Avenue
Associate Professor of Law.

GEORGE WILLIAM VAUGHN, LL. B.....111 Ashland Avenue
Associate Professor of Law.

EDWARD FRANKLIN FARQUHAR, A. M.....629 Sayre Avenue
Associate Professor of English.

LEHRE LIVINGSTON DANTZLER, M. A.....136 E. Maxwell St.
Associate Professor of English.

CHARLES D. BOHANNAN, A. B.....413 Aylesford Place
Associate Professor of Education.

CHARLES PRESTON WEAVER, M. A.....149 Washington Ave.
Associate Professor of English.

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*Resigned January 15, 1913.

ASSISTANT PROFESSORS.

*William Snyder Webb, M. S.....363 Transylvania Park
Assistant Professor of Physics.

Lloyd Cadie Daniels, Ph. D.....270 S. Limestone St.
Assistant Professor of Chemistry.

Louis Edward Nollau, M. E.....Bell Court
Assistant Professor of Drawing.

Sue Dobyns McCann, M. S.....224 East High St.
Assistant Professor of Entomology.

Alfred Holley Gilbert, B. S.....609 S. Limestone
Assistant Professor of Botany.

*Elijah Latham Rees, C. E.....726 E. Main St.
Assistant Professor of Mathematics.

Harold Hardesty Downing, B. C. E.....158 North Ashland
Assistant Professor of Mathematics, and Physical Education.

Mary LeGrand Didlake, B. S., M. S.....481 East Main
Assistant Professor of Entomology and Botany, Experiment Station.

Edmond J. Kinney, B. S. in Agr.....465 Woodland Ave.
Assistant Professor of Agronomy.

Earl Dissinger, B. S.....101 East High
Assistant Professor of Mining and Metallurgy.

Knox Jamison, B. S., A. M.....410 Rose Lane
Assistant Professor of History.

Saxe Dabney Averitt, M. S.....304 East Maxwell

Oliver March Shedd, M. S.....348 Linden Walk
Division of Chemical Research, Experiment Station.

Howell Davis Spears, M. S.....703 Rose Street
Chemist, Feed Division, Experiment Station.

Erle Cleveland Vaughn, A. B.....304 South Limestone
Assistant Professor of Entomology and Botany, Experiment Station.

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*On leave of absence.

MARION REXFORD SCHNAITTER, B. S., LL. B.....390 South Upper
Assistant Professor of Latin.

ROBERT HOOVER SPAHR, B. S.....390 South Upper
Assistant Professor of Physics.

AUBYN CHINN, A. B.....Arts Club, West Second
Assistant Professor of Household Science.

MARY E. SWEENY, B. S., M. S., Hagerman Apartment, West Second
Assistant Professor of Household Science.

JAMES AARON FARRA, B. S.....The Waverly, Hampton Court
Assistant Professor of Agricultural Engineering.

RUDOLF ERNEST KNAPP, B. S.....609 South Limestone
Assistant Professor of Bacteriology.

RUBY MILDRED BUCKMAN, A. B., B. S.....239 South Limestone
Assistant Professor of Household Arts.

ROBERT GRAHAM, D. V. M.....152 East High St.
Assistant Professor of Veterinary Science and Assistant in Division of Animal Husbandry (Beef Cattle, Sheep and Swine), Experiment Station.

LAMBERT SEYMOUR CORBETT, B. S., B. S. A.....289 South Limestone
Assistant Professor of Animal Husbandry and Assistant in Division of Animal Husbandry (Beef Cattle, Sheep and Swine), Experiment Station.

SADOCIE CONNELLEE JONES, M. S.....327 South Upper St.
Assistant Professor of Soil Physics, Division of Agronomy.

WILLIAM DURRETT NICHOLLS, B. S., in Agr.....327 South Upper St.
Assistant Professor of Dairy Husbandry.

CINCINNATUS DECATUR KILLEBREW, M. S.....287 South Limestone
Assistant Professor of Physics.

J. EMBRY ALLEN, A. B.....Aylesford Place
Assistant Professor of Law.

WILLIAM ELMER NICHOLS, A. B., LL. B.....City Y. M. C. A.
Assistant Professor of Law.

WILLIAM HENRY TOWNSEND, LL. B.....224 East High St.
Assistant Professor of Law.

INSTRUCTORS AND ASSISTANTS.

WILLIAM RODES, B. S.....Cor. High and Rodes Ave.
Assistant Chemist, Fertilizer Division, Experiment Station.

AZRA LYTLE WILHOIT, B. M. E.....312 South Upper
Instructor in Steam Laboratory.

JOHN SHERMAN HORINE, B. M. E.....239 South Limestone
Instructor in Steam Engineering.

BENJAMIN DUNBAR WILSON, B. S.....Versailles Road
Assistant Chemist, Fertilizer Division, Experiment Station.

HOWARD HERMAN JEWETT, M. A.....153 Church Street
Research Assistant in Entomology, Experiment Station.

HOLLY RAY NISWONGER, M. A.....153 Church Street
Instructor in Zoology and Entomology

GROVER CLEVELAND ROUTT, B. S. Agr.....224 East High St.
Assistant in Animal Husbandry Division.

JAMES EDWARD MASTIN, B. S., Agr.....628 South Limestone
Assistant in Food Laboratory.

JOSEPH DICKER.....169 Virginia Avenue
Instructor in Foundry and Machine Shop.

JOHN BORN DICKER.....174 Virginia Avenue
Instructor in Wood Shop.

LAWRENCE ARTHUR CALLAWAY, B. S.....South Broadway
Instructor in Assaying and Mining.

THOMAS JAMES BARR, B. M. E.....321 Rose Street
Instructor in Mining Machinery.

JAMES STEWART CURTIS, B. M. E.....136 East Maxwell
Instructor in Testing of Materials Laboratory.

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

LUTHER EWING PETTY.....412 Rose Street
Instructor in Mathematics.

HELEN BULLITT LOWRY.....258 Market Street
Instructor in Freehand Drawing.

GORDON THURMAN.....131 Virginia Avenue
Assistant in Experimental Laboratory and Mechanical Engineering.

JESSE VERNON BAXTER.....367 Oldham Avenue
Engineer and Assistant in Wood Shop.

JOHN WILLIAM NUTTER.....149 Virginia Avenue
Dairyman, Animal Husbandry Division.

AVERY EARLY EWAN, B. S., Agr.....315 East Maxwell
Assistant to the Agronomist, Experiment Station.

JOHN WILLIAM MCFARLIN, B. S.....Franklin, Kentucky
Chief Inspector, Food and Drug Division.

JAMES SPENCER MCHARGUE, B. S.....312 South Upper
Assistant Chemist, Chemical Division, Experiment Station.

GARRETT DAVIS BUCKNER, Ph. D.....165 Market St.
Chemist, Division of Chemical Research, Experiment Station.

JOHN IRVIN CLAYBROOK.....Springfield, Ky
Inspector of Feeds.

CHILTON SCOTT PORTER, A. B., Ph. G.....430 East Maxwell
Inspector of Drugs.

BENJAMIN FRANKLIN SCHERFFIUS, B. S., Agr.....227 E. Maxwell
Expert U. S. Department of Agriculture.

WALTER REDMON PINNELL, M. D.....Louisville, Ky.
Bacteriologist, Food and Drug Division.

*WILLIAM C. MATTHEWS, A. B.....Lexington, Ky.
Artist, Division of Entomology and Botany, Experiment Station.

LEWIS WESLEY MCELYEA, D. V. M.....287 South Limestone
Assistant Veterinary Science, Field Work.

THOMAS FOREMAN OTT, B. S.....138 North Upper
Instructor in Chemistry.

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*On leave of absence.

EDGAR FLEMING BATES, B. S.....250 South Limestone
Laboratory Assistant in Physics.

PERCY G. SAVAGE, B. S.....363 Transylvania Park
Instructor in Chemistry.

FLOYD CENTER MUELLER, B. S., M. E.....109 Woodland Avenue
Instructor in Mechanical Drawing.

JAMES RAY DUNCAN, B. M. E.....155 East Third
Instructor in Electrical Engineering.

WILLIAM E. BUTT, A. B.....413 Aylesford Place
Assistant in Political Economy.

HERBERT BRADLEY HENDRICK, B. S. A.....414 Aylesford Place
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JOHN HENRY CARMODY, B. S. A.....414 Aylesford Place
Assistant Horticulturist, Experiment Station.

RALPH KENNY, B. S., in Agr.....372 Upper South
Assistant, Farm Crops.

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Instructor in Botany.

ALVIN J. REED.....339 Park Avenue
Dairy Expert, U. S. Department of Agriculture.

ELMER INGRAM.....Lexington, Ky.
Chief Feed Inspector, Feed Division, Experiment Station.

ELMER FRANCIS WORTHINGTON, B. S., in Agr.....224 East High Street
Food Inspector, Food and Drug Division, Experiment Station.

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Assistant in Veterinary Science, Division of Animal Husbandry (Beef Cattle, Sheep and Swine), Experiment Station.

ROBERT LORING PONTIUS, V. S.....289 South Limestone
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WALTER SCHEPPLEMAN, M. B.....429 Transylvania Park
Bakery Expert, Food and Drug Division, Experiment Station.

WILLIS GRANVILLE TERRELL.....Lexington, Ky.
Inspector, Food and Drug Division.

ROGER WALTER JONES.....336 Madison Place
Inspector, Feeds and Fertilizers, Experiment Station.

LECTURERS.

MISS ELIZABETH SHELBY KINKEAD.....West Second St.
Lecturer in English Literature.

JOHN R. ALLEN.....417 Fayette Park
Lecturer on Criminal Law.

RICHARD C. STOLL, A. B., LL. B.....444 West Third
Lecturer on Corporations.

SAMUEL M. WILSON.....435 Fayette Park
Lecturer on Expert Testimony.

OTHER OFFICERS.

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

CLARENCE W. MATHEWS, B. S.....660 South Limestone
Secretary of the Faculty.

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

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

MRS. ANNA BERRY JONES.....184 Park Avenue
Stenographer, Department of Education.

LUCY KELLER HUTCHCRAFT.....Mentelle Park
Secretary, College of Agriculture.

LILLIE LISTON.....270 South Limestone
Chief Clerk, Food and Drug Division, Experiment Station.

ANNA WALLIS, A. B.....326 Aylesford Place
Clerk, Fertilizer Division, Experiment Station.

OLEVA LOUISE GINOCHIO.....240 Lexington Ave.
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MAY GRACE GINOCHIO.....267 Lexington Ave.
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ETHEL V. T. CASWELL.....179 East Maxwell St.
Clerk, Chemical Division, Experiment Station.

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

MRS. NELL H. TURNER.....361 South Broadway
Secretary to the Director of Mechanical Engineering.

CORNELIA CORA PAGE.....201 North Mill
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MURIEL CASWELL.....179 East Maxwell
Clerk, Division of Horticulture, Experiment Station.

BELLA WITHERS.....628 West High
Stenographer.

Y. M. C. A. GENERAL SECRETARY.

EDWARD LEVERICH HALL, A B.....414 Linden Walk

U. S. WEATHER BUREAU.

GEORGE HAROLD NOYES, A. B.....348 Aylesford Place
Forecaster.

OLLIE L. LEWIS.....355 Rose Street
Assistant Observer.

LAYTON THOMPSON.....411 E. Maxwell St.
Clerk.

Part II.

GENERAL INFORMATION.

I. 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 landscript had meanwhile been sold for fifty cents per acre, and the amount received—$165,000—invested in six percent Kentucky State bonds, of which the State became custodian in trust for the College.

The connection with Kentucky University continued till 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 amendents 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 interest 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 landscript invested in State bonds, has enabled the Trustees to begin and carry on, upon a scale commensurate with the wants of our people, the operations 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 tactics, 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 eighteen 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 Ter-

itory $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-three annual reports and one hundred and seventy bulletins, and general appreciation of their utility is shown by the fact that, while no bulletin is sent except upon application, the present mailing list of the station contains about fifteen 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 61 persons engaged in eleven divisions 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 thirty 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, inclosed 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 hundred one-tenth acre plots, for convenience in making crop tests.

Buildings.

Administration Building—This is a structure of stone and brick, 140 x 68 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 each day, 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 Building—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, while the new building, with its fine lecture hall, recitation rooms and laboratory, is used almost exclusively for the large classes in general chemistry.

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, 96 x 97 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—This structure of pressed brick and Bedford stone, 100 x 157 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, lockers for women, and the offices of the Commandant and the Physical Director for men. The second floor is occupied by the Y. M. C. A. Hall, the Trustees' room, a literary society hall for women, and the offices of the Physical Director for women. The third floor is divided into two literary society halls for men and the Alumni Hall. All of these rooms are commodious and well adapted to their purposes. The right wing, which is 48 x 95 feet, is used as a drill room during the bad weather. 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 the best apparatus that could be procured.

Education Building—This building was erected for the use of the Departments of Education and Domestic Science. The structure is of pressed brick and Bedford stone, and the design follows the most approved style of modern school architecture. The building contains ten class-rooms, a study room for young women, and one for young men, a department library-room, two offices and a very large room for the literary society of the Department of Education.

Library—This building is due to the munificence of that prince of benefactors, Andrew Carnegie. It is located on the court between the Administration Building and the Presidents' 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 Dean, the general and advanced plant laboratories, and a lecture room. On the second floor are the offices for the Professor of Animal Husbandry and the Professor of Agronomy, three class-rooms, and an attractive reading room. The third floor affords space for an Agricultural Museum, a commodious assembly room for the Grange and other agricultural society meetings and exhibitions, and a photographic laboratory with dark rooms. A modern iron-frame 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 for the Department of Physics. It is a three story brick structure 79 x 127 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 by a passage-way twenty-five feet wide. The main building is 45 x 100 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 Inspector of Mines and Director of the Geological Survey. The second building is 40 x 80 feet and two stories high. It is devoted solely to laboratory work, and is one of the largest mining laboratories in the country. One room is occupied by the chemical laboratory of the State Geological Survey.

Observatory—An observatory for the use of an eight-inch telescope, with the necessary appliances for making it available, is among the recent additions to the educational equipment of the University.

Dormitories—The two large brick dormitories on the campus afford lodging for the students who wish to lessen their expense of living.

Other buildings on the campus are a brick dwelling for the President, and a cottage occupied by the Commandant.

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 trimmings. 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, which is 114 x 60 feet, is colonial, adhering mainly to classic proportions. A large addition to this building, running 92 feet parallel to Washington Avenue and 115 feet parallel to Limestone Street, is rapidly nearing completion. This addition will provide from forty to fifty additional work rooms and will contain 20,700 feet of floor space.

Farm Building—On the farm is a brick dwelling occupied by the Director of the Station, a modern thoroughly equipped dairy-barn, a house for the storage of crops, and the usual buildings for the care of tools, the protection of stock, and the like.

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 a quarter 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 distant not more than ten minutes by electric railway from the principal churches of the city, 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 thirteen 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 for exercise. Ample provision has also been made for exercise in the rear lawn, on which are tennis courts and croquet grounds.

II. 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.

A. 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.

Of the fifteen units required for admission, the 8½ units in list A are prescribed for admission to the Freshman Class in all Colleges and Schools of the University as follows:

LIST A.

English	3
Algebra	1½
Plane Geometry	1
History	1
Foreign Languages	2

Of the 6½ additional units required for admission, the following are prescribed by individual Colleges:

College of Arts and Science—For the Degree of A. B.:

Science	1
Foreign Language	2

(Foreign Languages in Lists A and B must include 3 years of Latin.

College of Arts and Science—For the Degree of B. S.:

Science	1

College of Agriculture:

Science	1

Colleges of Engineering:

Solid Geometry	½
Science	1

College of Law:

History	1

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

The remainder of the 15 units must be made up from the subjects in List B. No subject will be accepted for an amount less than the minimum in List B. Not more than two units will be allowed for the vocational subjects for entrance credit. (A student should so select his credits from List B as to include all the prerequisites for subjects in the course which he proposes to pursue.)

LIST B.

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

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

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 (see page 47). Each of these methods is described on the following pages.

a. ADMISSION BY EXAMINATION—DESCRIPTION OF ENTRANCE UNITS.

Examinations for admission will be held in the University on Sept. 15-16-17, 1913.

All persons who wish to enter the University for the Fall Term's work, except those whose entrance credits have been accepted by the Committee on Entrance, must take these examinations. They shall present themselves at the office of the Committee on Entrance at 8:30 a. m. of Monday, September 15. They will then receive directions concerning the places at which their examinations will be held. For the hours of the examinations, see schedule page 9.

English. The units in English are based upon the requirements of the College Entrance Examination Board.* English a and b are both included in the specified entrance requirements and are estimated together as three units.

(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 that 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 required 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 episodes 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; Vergil's Aeneid. The Odyssey, Iliad, and Aeneid should be read in English translations of recognized literary excellence. For any unit of this group a unit from any other group may be substituted.

(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.

*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 pamplet containing the information will be sent free to any teacher upon request. Address: College Entrance Examination Board, Substation 84, New York.

(c) (One to be selected). Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; either Scott's Ivanhoe, or Guentin Durward; Hawthorne's House of the 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 Coverley 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 Greely, 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; Coleridges' 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, 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, Hervé Reil, Pheidippides, My Last Duchess, 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 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 plain geometry and a half year each to solid geometry and plain 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 work for the four years 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 porportion; 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 *n*th 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 to the mensuration 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 trigonometic functions as ratios, the theory of logarithms and 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 of 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 Ceasar and Cicero.

(2) *Ceasar—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 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 pronunication; (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, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also in the use of the more common prepositions, the simpler uses of the modal 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 reproduction of natural forms of expression; (e) the reading of 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, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementry 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 text 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 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 reproductions 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 the 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 translation 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 verbs 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 judgement 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 forty 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 unit may be offered in this subject. The preparation in chemistry should be conducted upon the same general plan suggested for the 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 not further than can be done with a simple magnifier. Accurate drawings and concise notes 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 will 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, earth-quakes, 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.

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.

b. 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, which are those used by all the colleges of the Kentucky Association, 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 10th. 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 the 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.

PUBLIC HIGH SCHOOLS.

Class A.

Location	Name of School	Supt. or Prin.
Ashland	High School	B. F. Stanton.
Augusta	High School	T. Sandford Williams
Bellevue	High School	W. P. King.
Bowling Green	Western Ky. Normal	H. H. Cherry.
Carrollton	High School	G. H. Wells.
Catlettsburg	High School	C. E. McCorkle.
Central City	High School	W. C. Bell.
Covington	High School	H. O. Sluss.
Cynthiana	High School	T. A. Hendricks.
Dawson Springs	High School	J. C. Jenkins.
Elizabethtown	Hardin Co. H. S.	C. H. Gifford.
Falmouth	High School	I. C. Reubelt.
Flemingsburg	High School	Edmund Wroe.
Frankfort	High School	H. C. McKee.
Franklin	High School	J. V. Chapman.
Fulton	High School	I. T. Green.
Georgetown	High School	J. C. Waller.
Glasgow	High School	E. B. Terry.
Greenville	High School	C. C. Hayden.

Class A—Continued.

Location	Name of School	Supt. or Prin.
Hardinsburg	County High School	R. Y. Maxey.
Harrodsburg	High School	J. A. Nickell.
Hartford	High School	H. E. Brown.
Henderson	High School	J. H. Bentley.
Hopkinsville	High School	W. E. Gray.
Lancaster	High School	J. L. Riley.
Lawrenceburg	County High School	Mrs. R. Kavanaugh.
Lawrenceburg	Town High School	H. V. Bell.
Lebanon	High School	J. R. Sterritt.
Lexington	Morton High School	F. R. Parks.
Louisa	High School	E. M. Kennison.
Louisville	Girls' High School	O. L. Reid.
Louisville	Male High School	S. B. Tinsley.
Louisville	Manual Training H. S.	E. P. Chapin.
Ludlow	High School	C. D. Reynolds.
Madisonville	High School	R. B. Rubens.
Marion	High School	J. U. Snyder.
Mayfield	High School	C. T. Cannon.
Maysville	High School	J. W. Bradner.
Mt. Sterling	High School	W. O. Hopper.
Morganfield	High School	J. W. McDonald.
Murray	High School	F. E. McReynolds.
Newport	High School	J. A. Sharon.
Nicholasville	High School	W. G. Hart.
Owensboro	High School	J. H. Risley.
Owenton	High School	J. B. Halloway.
Paducah	High School	W. H. Sugg.
Paris	High School	G. W. Chapman.
Pembroke	High School	B. F. Brown.
Princeton	High School	G. C. Sipple.
Richmond	Caldwell High School	D. W. Bridges.
Richmond	Model High School	J. H. Hoskinson.
Richmond	Eastern Ky. Normal	J. G. Crabbe.
Shelbyville	High School	T. H. Houston.
Somerset	High School	J. W. P. Brouse.
Stanford	High School	J. W. Ireland.
Sturgis	High School	H. W. Loy.
Walton	High School	J. G. Prather.
Winchester	High School	E. F. Darnaby.

Class B.

Location	Name of School	Supt. or Prin.
Bardstown	High School	P. H. Neblett.
Beaver Dam	West Ky. Seminary	O. L. Shultz.
Bedford	Trimble Co. H. S.	R. A. Edwards.
Benton	High School	E. A. Ryle.
Bowling Green	High School	E. H. Sigler.
Butler	High School	M. C. Ratcliffe.
Cadiz	High School	R. H. Brown.
Carlisle	High School	R. D. Squires.
Clinton	County High School	H. W. Puckett.
Cloverport	High School	T. B. Culton.
Columbia	High School	C. C. Turner.
Corydon	High School	L. H. Gehman.
Danville	High School	O. B. Fallis.
Dixon	High School	S. G. Boyd.
Elkton	High School	E. B. Weathers, Jr.
Eminence	High School	J. B. Sibley.
Guthrie	High School	J. B. Johns.
Hickman	High School	B. F. Gabby.
Hodgensville	High School	G. C. Woodson.
Horse Cave	High School	T. H. Napier.
Junction City	High School	R. D. Gibson.
LaCenter	County High School	C. C. Justus.
LaGrange	High School	W. J. Caplinger.
Leitchfield	High School	T. A. Humble.
Mayslick	County High School	R. F. Gaither.
Middlesboro	High School	M. O. Winfrey.
Midway	High School	W. R. Chandler.
Minerva	County High School	W. C. Coryell.
Morgantown	High School	Marian K. Gillan.
Munfordville	High School	Geo. E. Bailey.
Newcastle	High School	J. A. Caldwell.
Sebree	High School	T. W. Oliver.
Springfield	High School	C. C. Colvin.
Tompkinsville	High School	R. A. Palmore.
Uniontown	County High School	J. S. Singleton.
Versailles	High School	W. O. Vaught.
Vine Grove	High School	G. L. Crumm.
Warsaw	High School	C. S. Joseph.
West Liberty	High School	H. C. Wilson.
West Point	High School	W. H. Sprigg.
Wickliffe	High School	W. F. Bohannon.
Williamstown	High School	Henry Newton.

PRIVATE INSTITUTIONS.

Class A.

Location	Name	Supt. or Prin.
Barbourville	Union College	Percy L. Ports.
Clinton	Marvin Univ. School	A. J. South.
Columbia	Lindsey-Wilson	P. D. Neilson.
Glasgow	Liberty College	M. W. Hatton.
Hopkinsville	McLean College	A. C. Kuykendall.
Lexington	Hamilton College	H. G. Shearin.
Lexington	Sayre College	J. M. Spencer.
London	Sue Bennett 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.
Millersburg	Military Institute	Col. C. M. Best.
Newport	Academy Notre Dame of Providence	Mother Maria.
Owensboro	Owensboro College	J. E. Larue.
Paintsville	Sandy Valley Seminary	Prof. Morelock.
Pikeville	Collegiate Institute	J. F. Record.
Russellville	Bethel College, Prep	F. D. Perkins.
Shelbyville	Science Hill	Clara M. Poynter.
Stanton	Stanton College	J. C. Hanley.
Versailles	Margaret College	James M. Maxon.
Williamsburg	Williamsburg Institute	E. E. Wood.
Wilmore	Asbury College Academy	E. T. Franklin.

Class B.

Location	Name	Supt. or Prin.
Campbellsburg	High School	J. W. Pearcy.
Elkton	Vanderbilt Training	Matheny-Bates.
Franklin	Training School	H. W. Browder.
Hazel Green	Hazel Green Academy	J. T. McGarvey.
Hindman	W. C. T. U. School	Miss Ethel DeLong.
Inez	Wilson Mem. Academy	J. C. Kelly.
Lexington	Williams Prep. School	Miss Ella M. Williams.
Nicholasville	Boys' School	T. B. Threlkeld.
Oneida	Baptist Institute	J. A. Burns.
Smith's Grove	Warren Baptist Academy	R. H. Shipp.
Versailles	Rose Hill Academy	M. J. Jesse.

B. 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.

C. 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.

c—They must satisfy the Committee on Entrance of their fitness to do the work which they propose to undertake.

Under certain conditions students may be admitted to a two year agricultural course. For detailed information, see page 130.

A ten week course for special students is also offered in farming. For further information see page 132.

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

D. 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 accepted as students. Applications 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 page 188.

III. RESIDENCE AND GRADUATION.

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.

Written examinations are held in all classes at the close of the first and third terms of the session (*See University Calendar, page 7*). At the close of the second term written examinations are held on subjects which are completed at that time. Reports are sent to the parent or guardian of each student in January and June to indicate as nearly as possible the quantity and the quality of the work done by the student. Special reports are sent on request at any time.

Public Exercises.

All exercises assigned for any public occasion must be submitted to the President for approval at least one week before the time for the performance.

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.

Rules Regarding Conditions and Failures.

1. *A Condition* may be removed by passing an examination, either regular or special. A condition not thus removed becomes a failure. A conditioned

student must take either the regular or special examination but can not enter both. If he is unable to pass the examination which he enters, the condition becomes a failure. The regular examination for the removal of conditions is held the third week before the end of the term following that in which the condition was incurred.

2. *A Failure* may be removed only by taking the subject again in class. This must be done as soon as the study 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.

The special examination is held on the first Saturday of the first term for students conditioned in studies of the second term. The student who desires either of these examinations must notify the Registrar and the head of the department concerned at least two days before the examination desired so that arrangements can be made for the examination. Unless such notice is received, the student will not be permitted to take an examination.

Fees.

All students who are residents of the State of Kentucky will be admitted into the University free of tuition.

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.

Each student will be required to make a deposit of $10.00, out of which $6.00 may be taken in payment of a card which will entitle the holder to the following privileges, free of charge, for the year:

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 admission to all athletic contests and exercises given under the auspices of the University Athletic Association.

Whatever remains, less damage, will be returned to the student at the end of the year.

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

Nonresident students each pay a tuition fee of $10.00, and an incidental fee of $5.00.

Students entering after the Christmas holidays shall pay one-half the fees here stipulated.

A diploma fee of $5.00 (in the Law College, $10.00) is charged.

Late Registration.

A fee of one dollar will be charged all former students entering after the regular registration period. This rule applies to both terms.

Changes in Registration.

Thirty 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 alteration 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 of the second and third terms.

Expenses.

The necessary expenses, in addition to the above 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 for 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 per week. The occupants furnish their own napkins, towels and bedding, except mattresses and pillows, and pay their own laundry bills.

Student Advisers.

Each man upon matriculation shall select, or should he prefer, the Dean of Men will select for him, 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 Dean of Men, with whom they frequently confer. All young women are under the direct supervision of the Dean of Women.

Employment Bureau.

Many students find it necessary to earn money with which to help support themselves while in college. An employment bureau has been organized by President Barker 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 homes of the citizens. Almost all the buildings of the University are kept clean by students. A number of 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 Business Agent.

Library Hours.

The library is open to students daily from 9 a. m. to 6 p. m., and from 7 p. m. to 9 p. m; on Sundays from 2 p. m. to 5 p. m.

Health Advantages.

The sanitary arrangements of the University are excellent. Its buildings occupy one of the highest positions in or around Lexington. A large reservoir, a few miles from the city, furnishes an abundant supply of pure water at all seasons of the year. The natural drainage of the University grounds and its system of sewerage are all that can be desired. Serious illness among the students is extremely rare. The University physician gives all needed attention to the health of the students and excellent service can be secured when needed in either of two large, well equipped hospitals in the city. The University has a furnished room in the Good Samaritan Hospital, which is within five minutes' walk of the University grounds.

Religious Exercises.

As morals and religion should form a part of every young person's education, the students of the University are encouraged to attend divine service

at least once each Sunday. Clergymen from several of the religious denominations of the city conduct some of the chapel exercises each week, and other religious exercises are conducted by the Y. M. C. A. and the Y. W. C. A. of the University (v. page 23). Nearly all the religious denominations are represented in the Faculty.

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 Laws (LL. B.)
Bachelor of Civil Engineering (B. C. E.)
Bachelor of Mechanical Engineering (B. M. E.)
Bachelor of Mining Engineering (B. E. M.)

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 Philosophy (Ph. D.)

For further information concerning advanced degrees, see page 190, flg.

Residence Requirement for 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.

IV. SCHOLARSHIPS AND PRIZES.

County Appointees.

Each county in the State is entitled to select and to send to the State University one or more properly prepared students, free of charge for tuition, matriculation 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 (see page 54) to those matriculated 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 matriculates. If an appointee leaves the University before the expiration of his appointment his County Superintendent may appoint another person for his unexpired time.

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 examination are reported to the Superintendent, who from the data thus furnished selects the appointees. Examinations are made upon subjects transmitted to the County Superintendent 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. Appointments when made should be immediately certified to 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 annual installments, the first payment being made at the beginning of the Freshman year.

Japanese Society Prize—1912-13.

Through the munificence of Mr. Henry Crews, the Japanese Society of New York donated this year the sum of $100 to be awarded in sums of $75 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.

Tau Beta Pi Scholarship Prize.

The Tau Beta Pi Society offers a cash prize of $100 to that 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.

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 Prize.

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.

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.

Oratorial Prize.

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

Prize in Declamation.

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 Students' 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 set of Andrew's American Laws, consisting of two volumes and containing a compendium of American Laws.

V. ORGANIZATIONS AND STUDENT ACTIVITIES.

Y. M. C. A.

The Young Men's Christian Association has a steadily increasing membership 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. In addition to its religious work, including weekly meetings, lectures and Bible Study, it controls the tennis courts on the University campus and offers an interesting social life to its members. In order to promote most efficiently this varied and important work, an advisory committee of ten members cooperates with the association in its efforts to be influential in the moral and religious life of the University. On this committee the local ministry is represented by one member, the city Y. M. C. A. by one, the faculty by five, and the student body by three, all of whom are elected by the association.

During the present year, the work of the association has been vigorous and stimulating. A General Secretary, Mr. E. L. Hall, has been secured who is devoting his whole time and energy to the work. Systematic work has been done in all the departments under the direction of enthusiastic student workers. It has given direction strongly to the social life on the campus throughout the year in providing receptions and other social 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 done a great work in raising a hospital fund for the benefit of its members. It has also cooperated with the Employment Bureau in securing work for worthy students.

Meetings are held each Wednesday in the Y. M. C. A. room from 7 to 7:45 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 and 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 Gynmasium 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 chartered in 1888. It is provided with a handsome room and a good library.

The Philosophian and Neville Societies.

These societies, instituted, the former in 1882, the latter in 1905, by young women of the University, for literary improvement and social pleasure, offer, besides the usual weekly meetings, public entertainments consisting of declamations, essays, criticisms, and addresses.

Other Societies.

The various Colleges of the University have organizations which meet regularly to discuss topics of interest to the students of the Colleges. In the College of Civil Engineering is the Brooks Engineering Society; in the College of Mechanical and Electrical Engineering, the State University Branch of American Society of Mechanical Engineers, and Student Branch of the American Institute of Electrical Engineers; in the College of Mines and Metallurgy, the Kentucky Mining Society; in the College of Agriculture, the Agricultural Society, and Ashland Grange 1655; in the College of Law, the Henry Clay Law Society.

In addition to these are a number of departmental societies devoted to the interests of the several departments—the Mathematics Club, the History Club, the class Engineering Societies, the Horace Mann Society in the School of Education, and the Chemistry Society. The Press Club and the Strollers cultivate journalistic and dramatic talent respectively.

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, 3 of whom are Seniors, 3 Juniors, 2 Sophomores, and 2 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 12 students. The Faculty of the University cooperates with the Student Government Organization, and places the students on their honor.

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 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.

Musical Clubs.

The Glee Club and the Orchestra compose the University musical clubs. They are trained by competent directors and furnish students excellent opportunity to develop their musical gifts. During the present academic year, the Glee Club has given a number of successful concerts throughout the state. Students with musical talents are urged to join as soon as they enter the University.

Debating Teams and Oratorical Contests.

The University is represented annually in intercollegiate debates with other institutions of the State. The participants representing the University

are selected by a preliminary debate between the Union and Patterson Literary Societies.

Representatives of the College of Law participate annually in a triangular debate with representatives of the Law College of the University of Cincinnati and the Indiana Law College.

The University is represented annually in the Intercollegiate Oratorial 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 towards life among the students.

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 addition to membership in the Athletic Association, the student receives more than five dollars' worth of coupons, which are accepted at their face value for admissions to games and contests.

No student shall be eligible to membership on a Varsity Team unless (1) he is carrying ten hours regular work satisfactorily; (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 shall 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).

ACADEMY ABOLISHED.

An act of the Kentucky Legislature passed in 1908 provides: "That from and after two years from this date all sub-freshman work shall begin to be eliminated as a part of the University curriculum, and such elimination shall progress as rapidly as the educational conditions in Kentucky will justify.

In accordance with this statute the trustees of the University have abolished all sub-freshman work. While provision will be made for all students now enrolled in this work, *no students will be received in future except graduates of accredited High Schools or those who are prepared to offer for examinations the regular* 15 *entrance units* (*or the minimum,* 13 *units which admit to conditional Freshman standing*).

County Superintendents are especially requested to take notice of these regulations, and in future to make no appointments which do not comply with the above rules.

Part III.

COLLEGES AND SCHOOLS.

ORGANIZATION

COLLEGE OF ARTS AND SCIENCE:

School of Arts. Departments: English, Greek, History and Economics, Latin, Mathematics, Modern Languages, Philosophy.

School of Science. Departments: Anatomy and Physiology, Geology, Physics.

School of Chemistry.

School of Education.

COLLEGE OF AGRICULTURE:

Experiment Station.
- Division of Administration.
- Division of Agronomy.
- Division of Animal Husbandry.
- Division of Chemistry.
- Division of Entomology and Botany.
- Division of Feeds and Feeding Stuffs.
- Division of Commercial Fertilizers.
- Division of Foods and Drugs.
- Division of Horticulture.
- Division of Research.
- Division of Extension.

School of Agriculture. Departments: Agronomy, Animal Husbandry, Bacteriology and Entomology, Horticulture and Botany, Zoology.

School of Home Economics.

School of Extension.

COLLEGE OF CIVIL ENGINEERING:

School of Civil Engineering.
School of Highway Engineering.

COLLEGE OF MECHANICAL AND ELECTRICAL ENGINEERING:

School of Mechanical Engineering.
School of Electrical Engineering.

COLLEGE OF MINES AND METALLURGY:

1. School of Mining Engineering.
   (a) Mining Engineering.
   (b) Mining, two years' course.
   (c) Practical Miners' Course.

2. School of Metallurgical Engineering.
   (a) Metallurgy.
   (b) Ore Dressing.

3. 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 four schools: School of Arts, School of Science, School of Education, School of Chemistry.

The *School of Arts* consists of eight departments as follows: English, Greek, History and Political Science, Latin, Mathematics and Astronomy, Modern Language, Philosophy.

The *School of Science* consists of three departments, as follows: Anatomy, and Physiology, Geology, Physics.

The *School of Chemistry* consists of the Department of Chemistry, offering in addition to the general course in Chemistry a course in Industrial Chemistry.

The *School of Education* consists of the Department of Education. It offers professional courses to those preparing to teach.

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 credit 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. and graduate courses leading to the degrees of A. M. and M. S. and Ph. D.

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 offered 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.

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 credit hours, inclusive of those required in Military Science, Physical Training and Domestic Science.

Men are required to offer three credits in Military Science and two in Physical Training, and women two and one-tenth credits in Domestic Science and two in Physical Training.

The term "credit hour," or briefly a "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.

Military Science and Physical Training are classed as laboratory work.

In estimating the credit value of a subject pursued for less than a year, the number of hours per week it is given should be multiplied by .4 for the first term and by .3 for each of the two other terms.

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.

A student must take a sufficient amount of work to secure at least 17 credits each year during his 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 each of his Freshman and Sophomore years more than 21½ credits, or during each of his Junior and Senior years more than 18 credits.

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

In order therefore 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 change whatsoever may be made in this classification without the express permission of the Dean previously obtained.*

Majors for 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: English, Philosophy, Latin and Greek, Modern Languages, Mathematics, History and Political Economy, Anatomy and Physiology, Education.

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 course.

FRESHMAN YEAR.

	Credits.
English I and XV	3
History I	2
Math. Ia, or Chem. I or Physics III and V	3.6 to 5
Latin I	4
Greek or German	3
Physical Education	1
Mil. Science (men) or Domestic Science I (women)	1.5 to 2.1
Total	18.1 to 21.1

SOPHOMORE YEAR.

	Credits.
English XVI and XVII	3
Physiology I, or Botany I, or Zoology I, or Zoology IV	1.2 to 3
Physical Education	1
Military Science (men)	1.5
Total prescribed—	
Men	6.7 to 8.5
Women	5.2 to 7

JUNIOR AND SENIOR YEARS.

	Credits.
Logic or History of Philosophy	1.4
Geology I or Astronomy	2
Total	3.4

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: Mathematics and Astronomy, Anatomy and Physiology, Geology, Physics, Chemistry, Education.

Subjects Required for the B. S. Degree.

FRESHMAN YEAR.

Same as for A. B. Degree except applicant substitutes German (3 credits) for Latin (4 credits), and must take Mathematics I and II and either Physics III and V or Chemistry I.

Persons who take Physics in this year take Chemistry in their Sohpomore Year and *vice versa* with those who take Chemistry in their Freshman Year.

SOPHOMORE YEAR.

	Credits.
Physics III and V or Chemistry I	3.6 to 5
German IV	3
Physiology I	1.2 to 1.8
Zoology II and V or Botany I	2 to 3
Physical Education	1
Military Science (men)	1.5
Total prescribed	12.3 to 13.3

JUNIOR AND SENIOR YEARS.

Same as in the courses leading to the A. B. Degree.

Course in Industrial Chemistry.

This is a prescribed course throughout, as set forth in the announcement made by the School 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 classification, be allowed to take a part of his senior work in the College of Law and count this work towards 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 law degree, see page 179.

A. SCHOOL OF ARTS.

ENGLISH AND COMPARATIVE LITERATURE.

Professor Mackenzie, Associate Professors Dantzler, Farquhar, Hamilton and Weaver.

RHETORIC.

I. **English Composition.** The mechanics or technique is stressed. Written exercises on assigned topics; recitations; collateral reading of modern standard writers. In seven or more sections at hours to suit convenience of Freshman. Required in all courses. 3 hours per week, first and second terms. (FARQUHAR, WEAVER, ETC.)

II. Written and Oral Composition. Constant practice in accuracy rather than in elegance. Mainly for short course students and for foreigners. Not necessarily regarded as work toward a degree. 3 hours per week, throughout the year. (WEAVER, ETC.)

III. Advanced Composition. Lectures, prescribed exercises, and consultation with special attention to the short story. I is prerequisite. 2 hours per week, first and second terms. (WEAVER, ETC.)

IV. Commercial Correspondence. American and English business letters, follow-up letters, circular letters, etc. 2 hours per week, third term.

V. Journalism. News writing; interviewing; reporting; feature stories; typography; proofreading. Informal work on one of the local newspapers. 2 hours per week, throughout the year. (MACKENZIE)

VI. Advanced Journalism. Law of copyright, libel, etc. Files, American and European, for reference use by students. Editorial and business staffs of student publications open to members of class. Newspaper men in active service give lectures on various phases of the profession. V is prerequisite. 2 hours per week, throughout the year. (MACKENZIE)

VII. Public Speaking. Oral composition, declamation, and elocution in general. 2 hours per week, first and second terms. (HAMILTON, FARQUHAR)

VIII. Dramatic Speaking. Practice in modes of gestural and vocal impersonation, etc. 2 hours per week, second and third terms. (FARQUHAR)

IX. Thesis Writing. Training in method and form. 2 hours per week, throughout the year. (DANTZLER)

ENGLISH LANGUAGE.

X. Anglo-Saxon Grammar. Required of Sophomores whose major study is English. 2 hours per week, throughout the year. (MACKENZIE)

XI. History of English Language. Required of Juniors whose major is English. 2 hours per week, first term. (FARQUHAR)

XII. Middle English. Critical reading of Chaucer or Dunbar. Required of Juniors whose major is English. 2 hours per week, second and third terms. (FARQUHAR)

XIII. Historical English Grammar. 3 hours per week, first term. (DANTZLER)

XIV. Comparative Philology. Introductory. Required of Seniors whose major is English. 2 hours per week, second and third terms. (MACKENZIE)

ENGLISH LITERATURE.

XV. Modern English Drama. Collateral reading and frequent written exercises. Required in all courses during Freshman year. 3 hours per week, third term. (FARQUHAR, WEAVER, ETC.)

XVI. Romantic Movement. Burns, Wordsworth, etc.; assigned reading as well as written exercises. Required of Sophomores whose major is English. 3 hours per week, first and second terms. (HAMILTON, DANTZLER)

XVII. Nineteenth Century Poetry. Tennyson and Browning receive intensive study. Reading and weekly written exercises. Required of Sophomores as in XVII. 3 hours per week, third term. (HAMILTON, DANTZLER)

XVIII. Nineteenth Century Prose. 2 hours per week, first term. (DANTZLER)

XIX. Anglo-Saxon Reading. Cynewulf or other poets. Lectures on Oghams, Runes, and the social background of the pre-Norman period. Required of Juniors whose major study is English. 2 hours per week, throughout the year. (MACKENZIE)

XX. Principles of Literary Criticism. Required of Seniors whose major is English. 3 hours per week, first and second terms. (MACKENZIE)

XXI. Literature of United States. Its history and relation to national life and thought. For Sophomore Agricultural and other students. Lectures; assigned reading; written exercises. 2 hours per week, first term. (DANTZLER)

XXII. English Bible. Historical origin and literary structure of both prose and verse. 2 hours per week, throughout the year. (WEAVER)

XXIII. English and Scots Ballads. Lectures; class reading; papers on special phases. 2 hours per week, second and third terms. (DANTZLER, HAMILTON)

XXIV. Pre-Shakespearean English Drama. 3 hours per week, first term. (FARQUHAR)

XXV. History of English Prosody. 3 hours per week, second and third terms. (DANTZLER)

XXVI. Library Training. Fundamental principles as an aid to a broader knowledge of English. Lectures on theory throughout the course. Two hours' laboratory work, each week after Christmas. First Term—Training by librarian in classification, use of reference books, card catalog, preparation of bibliographies, etc. Second and Third Terms—Book selection and ordering, book binding, and mending, literature for children, school libraries, etc. 2 hours per week, throughout the year. (HAMILTON)

XXVII. Teachers' Course. This is a course in English for Secondary Schools from the Standpoint of Didactics. For Junior and Senior students of Education as well as High School teachers. 1 hour per week, third term. (WEAVER)

COMPARATIVE LITERATURE.

XXVIII. Evolution of Literature. An inductive study of literature as a social phenomenon. Required of Seniors whose major study is English. Text-book: Mackenzie's *Evolution of Literature*. 3 hours per week, first and second terms. (MACKENZIE)

XXIX. 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. 2 hours per week, throughout the year. (HAMILTON)

XXX. Greek Literature in English. Greek through translation. Intended primarily for students who have no knowledge of Greek. Allusion to Greek myth and poetry is so frequent in modern literature that even this acquaintance with Greek classics will greatly aid the student of modern classics. 2 hours per week, throughout the year. (TERRELL)

XXXI. Miss Kinkead's Lectures in English Literature. The work is of interpretive and critical rather than of a technical nature. Lectures are delivered upon specimens of great literature that are not emphasized in the usual text-book course. The object is the elucidation of the principles of literature as related to life. An attempt is made to inspire the student and to quicken in him the power of imagination which is necessary to success in every calling. Required of Seniors. Every Wednesday throughout the year, at 10 o'clock.

GREEK.

Professor Terrell. Acting Professor Strauss.*

I. Elementary Course. This course is intended for college students who wish to take up the study of Greek. Daily drill in the forms and the elementary principles of syntax. The first book of the Anabasis is read in the latter part of the year. 4 hours per week, throughout the year.

II. Anabasis and Lysias. This course is a continuation of Greek I. Four books of the Anabasis are completed; in the latter part of the year some of the orations of Lysias will be read. Exercises in Prose Composition once a week throughout the year. 4 hours per week, throughout the year.

III. Homer and Plato. 1. In HOMER, the Iliad, Books I-VI. Lectures on the Homeric Question, Life in the Homeric Age, Mycenaean Antiquities, and other topics germane to the subject matter. 2. In PLATO, the Apology and Crito, selections from the Phaedo. This course will be accompanied by lectures on the relations of Plato to Socrates, the position of Socrates as a moral teacher, his methods of investigation, and the debt to him and Plato of all modern philosophical inquirers. 3. Exercises in Prose Composition once a week throughout the year. 4 hours per week, throughout the year.

IV. Herodotus and Demosthenes. 1. In HERODOTUS, Books VIII, IX. This will include a rapid review of Greek history from the Ionic Revolt to the end of the Persian Wars. Lectures on the Ionic dialect, Herodotus' method of treating history, and the bearing of recent archaeological discovery on his credibility. 2. In DEMOSTHENES, Philippics IV, VI, IX. This course will include a rapid review of Greek History from the accession of Philip to the battle of Chaeronea, lectures on the history of Greek Oratory. Demosthenes' career as a statesman and his position as an orator will be carefully studied. 3 hours per week, throughout the year.

V. Thucydides and Tragedy. 1. In THUCYDIDES, Book II. The course will include a discussion of the causes which led to the Peloponnesian War, the reading of numerous selections in translation, lectures on Thucydides' style and on the causes of his preeminence as a historian. 2. In GREEK TRAGEDY, Sophocles, the Antigone; Aeschylus, the Prometheus Bound. Lectures on the origin and development of Tragedy. Aristotle's definition of Tragedy, Scenic Antiquities. 3 hours per week, throughout the year.

VI. Tragedy and Comedy. 1. In TRAGEDY, Euripides, the Medea; Sophocles, the Trachiniae. In this course the individualities of style and genius of the three tragedians will be discussed, their positions as playwrights in the light of both ancient and modern criticism. 2. In COMEDY, Aristophanes, the Clouds and Frogs. Lectures on the origin and development of Comedy,

*Absent on leave, 1912-1913.

the Comic Fragments, Old and New Comedy. This course will include a comprehensive review of Greek Literature based on Jebb's *Primer of Greek Literature.* 3 hours per week, throughout the year.

VII. Greek Literature. For this course in Greek Literature no knowledge of Greek is required. See Comparative Literature XXX.

FOR GRADUATES.

For courses scheduled primarily for graduate students see the statement of the graduate school.

HISTORY AND POLITICAL ECONOMY.

President Barker, Professor Tuthill, Professor Tigert, Assistant Professor Jamison, Mr. Butt, Miss Daugherty.

This Department was organized by President J. K. Patterson in the first year of the A. & M. College. To the original subjects have been added the newer subjects of Sociology and Political Science, so that the student may have a good introduction to each of these fields. With increased facilities and a larger faculty it is believed that the Department is offering courses of great practical value to those who are interested.

Students wishing to take History as a major study should register for the required Freshman work in the Arts course. In the Sophomore year they should take History III. In the Junior and Senior years one-third of their prescribed and one-third of their optional work will be in, and advised by, this Department.

The Department is provided with recitation rooms, and an office in the Education building. Library facilities include the books and periodicals of both University and Lexington City Libraries, thus affording opportunity to develop the subject matter of essays and debates. The Department will gladly answer inquiries relating to questions of finance, statistics, and social problems, from citizens of Kentucky.

Prizes are offered annually for special essays: the Bennett Prize for an essay on the principles of free government; the Ely Prize in Economics; and due notice is given as to various inter-collegiate contests for which the student is eligible.

Friends and Alumni are invited to send for deposit in the Library all account-books, diaries, letters and material descriptive of pioneer life in Kentucky.

HISTORY.

I. Ancient History. To assist the classical student and lay the foundation for European History. Text, topics, lectures, and quizzes. In several sections. 2 hours per week, throughout the year. (TUTHILL AND ASSISTANTS)

II. English Political and Social History. For students of English history, law, and institutions. 2 hours per week, throughout the year. (JAMISON)

III. Medieval History. More intensive than Course I, comprehending the history of Europe from 395 to 1500, with especial attention to the later centuries. Text, syllabus, readings, lectures, and quizzes. 3 hours per week, throughout the year. (TUTHILL)

IV. Modern Europe. A general survey of modern history, with separate volume on the French Revolution and Napoleon. Recommended to students of French and German Literature. 3 hours per week, throughout the year. (TUTHILL)

V. History of the United States. Beginning with the colonies about 1750, and concluding with a study of the national government. (Omitted in 1914.) 3 hours per week, throughout the year. (TUTHILL)

FOR UNDERGRADUATES AND GRADUATES.

VIII. 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. 1 hour per week, third term. (TUTHILL)

POLITICAL ECONOMY.

I. Introduction to Economics. Not open to Freshmen, but required of Seniors in mining. 2 hours per week, throughout the year. (TUTHILL, TIGERT)

II. Public Finance. Designed to explain various problems of administration and taxation. 2 hours per week, second and third terms. (BUTT)

POLITICAL SCIENCE.

I. American Government. A study of the rights, duties, and responsibilities of citizenship, together with a history of the evolution of our government in its various branches. Prescribed for Civil and Mining Engineers, and open to advanced students of other courses. 3 hours per week, throughout the year, in two sections. (BARKER, TUTHILL)

II. Municipal Government. Open to those who present Course I or its equivalent. 2 hours per week, second and third terms. (BUTT)

SOCIOLOGY.

I. American Charities. The care of the poor, both in private and public institutions, with excursions to public homes. Followed by a study of the principles and theory of social organization. 2 hours per week, throughout the year. (TUTHILL AND ——)

II. Special Problems. Open only to advanced students.

FOR GRADUATES.

For Graduate Courses see the announcements of the Graduate School.

LATIN.

Professor Jones, Assistant Professor Schnaitter.

V. Livy (Book I); Horace (Odes). 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. One hour a week throughout the year is given to exercises in Prose Composition. 4 hours per week, throughout the year.

VI. 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. 3 hours per week, throughout the year.

VII. Juvenal, Martial, Suetonius. Juvenal (selected Satires); Martial (selected Epigrams); Suetonius' Claudius. 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. 3 hours per week, throughout the year.

VIII. 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 first English Comedy, Ralph Royster Doyster, is founded on one of the plays of Plautus. Likewise, Shakespeare's Comedy of Errors is an adaptation from Plautus. 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. 2 hours per week, throughout the year.

IX. Cicero and Virgil. Five orations of Cicero and five books of Virgil's Aeneid will be read. Exercises in Prose Composition. 4 hours per week, throughout the year.

X. 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 Gaelic War will be read. 5 hours per week, throughout the year.

Courses IX and X 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 V. University credit allowed for this work to students who offer 15 units of entrance.

PRIMARILY FOR GRADUATES.

XI. Roman Satire. The history of the development of Satire will be traced and the following authors will be read in whole or in part—Eunius, Lucilius, Horace, Petronius, Persius, Seneca, Juvenal. Quintilian, after acknowledging the superiority of the Greeks in Epic and Lyric poetry and the drama adds: *Satira nostra est* (v. page 193).

MATHEMATICS AND ASTRONOMY.

Professor White, Professor Boyd, Professor Davis, Assistant Professors Rees and Downing, Mr. Petty.

MATHEMATICS.

The courses in Mathematics are designed to meet the needs of three classes of students:

(1) Those who wish the subject as an element in a general education. These should take Courses I-a-IV-a.

(2) Those who wish to use Mathematics in cognate subjects. These should take Courses I, II, III, IV, V.

(3) Those who wish to specialize in Mathematics. These should take Courses I, II, III, IV, V, VI, VII, IX, and in addition to these some work in applied Mathematics.

The graduate work is designed to give a general survey of the field of Mathematical Science and to serve as an introduction to any special field one might wish to cultivate.

The Mathematics Club meets weekly to discuss questions of interest in pure and applied mathematics and in the history and pedagogy of the subject. Its members are the teaching force of the department and the students who have mathematics for their major study; but its sessions are open to all who are interested in mathematics. At some of the meetings papers are read requiring more or less mathematical maturity and intended for teachers and graduate students. At others the object is to quicken the interest and broaden the view of the undergraduate student and to this end he is led to take an active part in the discussions.

FOR UNDERGRADUATES.

I. Plane Trigonometry. The standard course in Trigonometry. 5 hours per week, first term. (DAVIS, REES, DOWNING, PETTY)

I-a. Algebra and Trigonometry. This course is arranged for students who take a minimum of Mathematics. 5 hours per week, throughout the year. (BOYD, DAVIS, DOWNING, PETTY)

II. College Algebra. The course is designed to give that thorough and comprehensive training in Algebra which is of such vital importance to persons who wish to pursue higher courses in Mathematics. 5 hours per week, second and third terms. (REES, DOWNING, PETTY)

III. Analytical Geometry. An elementary course in Plane and Solid Analytical Geometry. Prerequisite, I and II, or I-a. 5 hours per week, throughout the year. (BOYD, DAVIS, REES, DOWNING)

IV. Calculus. Required of engineers and open to all others. Begins in January of the Sophomore year. Prerequisite for first term, one term of III; for second term, two terms of III. 5 hours per week, throughout the year. (REES, DOWNING)

IV-a. Calculus. Same as IV except that it begins in September of Junior year and is arranged for special students in Mathematics while open to all. Prerequisite, same as for IV. 5 hours per week, throughout the year. (DAVIS)

V. Spherical Trigonometry. Prerequisites I and II, or I-a. 3 hours per week, second term. (WHITE)

FOR UNDERGRADUATES AND GRADUATES.

VI. Higher Algebra. This course embraces Theory of Equations, Determinants and Vector Analysis and is given chiefly by lectures based on the treatment of these subjects in Burnside & Panton's *Theory of Equations*,

Hanus' *Determinants* and Gibbs-Wilson's *Vector Analysis*. It is designed as an introductory course for students who wish to specialize in Mathematics. (Omitted 1912.) 3 hours per week, throughout the year. (REES)

VII. Calculus and Differential Equations. An extended course in Calculus, given during the Fall Term, based on selected chapters from Granville's and Byerly's texts. During the Winter and Spring Terms an introductory course in Differential Equations is given based on Murray's *Differential Equations*. 2 hours per week, throughout the year. (DAVIS)

VIII. Teacher's Course. A Critical Review of the Mathematics of the High School. 2 hours per week, throughout the year. (DAVIS)

IX. Advanced Analytics. A thorough course designed to present the extended theory connected with conic sections and to make the student master of the abridged notation. It is also designed to serve as an introduction to a later course in the general theory of algebraic curves. Given in 1912-13. 3 hours per week, throughout the year. (BOYD)

FOR GRADUATES.

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

ASTRONOMY.

I. General Astronomy. This course is given two times per week during the entire year and is open to all students. 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. 2 hours per week, throughout the year. (WHITE)

MODERN LANGUAGES.

Professors Zembrod and Melcher, Associate Professor Dantzler, Assistant Professor Schnaitter, Miss Chorn, Mr. Jetton, Mr. Garman.

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

The Department Library has been considerably increased in the last two years, and new books are constantly added.

GERMAN.

A grammatical knowledge of the language and the ability to translate selections from the elementary class of works recommended by the Committee of the National Association of Modern Languages, at sight, also to translate English prose, based on such texts, into German, is required of all students who take German III (i. e., Freshman German). At least two years are required in this preparation.

Students, however, who offer the required number of units to enter Freshman class in the University, but have had no German, may take the work in classes, designated below: I and II. In German I and II five recitations per week are required to equal three per week in University classes in estimating credits.

I. Beginners' Course. Bierwirth's *Elements of German* completed as rapidly as possible, followed by rapid reading of easy texts and compositions based on texts read. Class is divided into five sections. 5 hours per week, throughout the year. (MELCHER, CHORN, SCHNAITTER, JETTON, GARMAN)

II. Intermediate Course. Selections from intermediate class of works recommended by the Committee of the National Association of Modern Languages, with Grammar drill and prose composition. Students are required to commit selections from German prose and poetry. Class is divided into three sections. 5 hours per week, throughout the year. (CHORN, SCHNAITTER)

III. Composition and Reading. (Primarily for Freshmen.) Pope's *German Composition and Conversation* to Part Second, followed by several hundred pages of prose, read rapidly. Studies in Schiller, or equivalent work. Prerequisite, German I and II. Class divided into four sections. 3 hours per week, throughout the year. (ZEMBROD, MELCHER, DANTZLER)

IV. Reading Course with Composition. (Primarily for Sophomores.) Schiller's *Maria Stuart*, Pope's *German Composition and Conversation*, completed; *Bilder aus der Deutschen Litteratur*, or equivalent; parts of some simple play committed for class room; Freie Reproduction. Class is divided into two sections. 3 hours per week, throughout the year. (MELCHER)

V. Junior. Lessing's *Minna von Barnhelm*; *Emilia Galotti*; Schiller's *Der Neffe als Onkel*, *Maria Stuart*; Goethe's *Egmont*; *Poems*; *Goetz von Berlichingen*. 3 hours per week, throughout the year. (ZEMBROD)

VI. Senior. Goethe's *Faust, Part* I; Lessing's *Nathan der Weise*; History of German Literature in the 18th and 19th Centuries. 3 hours per week, first term. 2 hours per week, second term. 3 hours per week, third term. (ZEMBROD)

FRENCH.

I. Beginners' Course. (Recommended for Sophomores.) Fraser and Squair's *French Grammar*; *Elementary French Reader*; Verne's *Michel Strogoff*. 3 hours per week, throughout the year. (ZEMBROD)

II. Reading Course. Fraser and Squair's *French Grammar*; Bowen's *French Lyrics*; French Prose 19th Century: Selections from Gautier; Lamartine; Hugo; Collateral Reading. 3 hours per week, first term. 2 hours per week, second term. 3 hours per week, third term. (ZEMBROD)

III. Advanced Reading. Fraser and Squair's *French Grammar*; French Classical Literature of the 17th Century: Selections from Corneille, Racine, Moliere; Collateral Reading; History of French Literature. 2 hours per week, throughout the year. (ZEMBROD)

SPANISH.

I. Beginners' Course. Edgren's *Elements of Spanish Grammar*; Traub's *The Spanish Verb*; Bransby's *A Spanish Reader*. 2 hours per week, throughout the year. (ZEMBROD)

ITALIAN.

I. Beginners' Course. Grandgent's *Italian Grammar*; *Elementary Reader*. 2 hours per week, throughout the year. (ZEMBROD)

PHILOSOPHY.

Professor Tigert.

The Department of Philosophy offers courses of study in the following studies: *Logic*, *Psychology*, *Philosophy*, *Ethics*.

I. Logic. This course is primarily intended as a complete exposition of the principles of scientific thinking, deductive and inductive. Considerable attention is given to the practical application of the theory and, Praxis is emphasized throughout the course. At least two courses in English are prerequisite for this course. Either this course or Philosophy III is required for Seniors who are candidates for degrees in Agriculture or Arts and Science. Text-book: Creighton's *Introductory Logic*. 2 hours per week, throughout the year.

II. 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 and modern periods of Philosophy are

emphasized, little time being given to the mediaeval period and scholasticism. An especial effort is made to bring students into contact with the sources. The general aim is to lay the foundation for more advanced courses in philosophy. Text-books: Rogers' *Students' History of Philosophy*; Bakewell's *Source Book of Ancient Philosophy*; Rand's "*Modern Classical Philosophers.*" 3 hours per week, throughout the year.

III. Psychology. This is the same as Education II but is open to students in any College who desire a complete course in the fundamentals of normal psychology. This course will be made experimental as far as possible and a thorough course in physiology is strongly recommended before undertaking it. Text-book: Angell's *Psychology*. 3 hours per week, throughout the year.

IV. 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*. 2 hours per week, throughout the year.

FOR GRADUATES.

For courses scheduled primarily for graduate students see statement of the graduate school.

B. SCHOOL OF SCIENCE.

ANATOMY AND PHYSIOLOGY.

Dr. 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. Arrangements are made to darken the room for the use of the lantern. 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, tambour, signal magnate, etc.

The department is supplied with all kinds of models, such as an Auzoux 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 Sphygmorgraph; 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 Colti 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.

PRIMARILY FOR UNDERGRADUATES.

I. General Physiology. Lectures, demonstrations and recitations, Tu., Th., at 10:30 throughout the year; M., W., F., 11:30 throughout the year.

II. Human Osteology. Tu., Th., 9. Throughout the year.

III. Advanced Physiology. Winter and Spring terms, M., Tu., W., Th., F., 2:30.

IV. Laboratory Physiology. The laboratory course in physiology is

required of Seniors during the first term in the afternoon from 1:30 to 3:30. The work begins with the central nervous system. The first exercises begins with the study of the normal frog; its posture when at rest; its movements when in water and on solids; compensatory movements, etc. A careful dissection of the frog's brain and drawings of it are made. Then follow experiments upon decerebrized frogs. Perfect cleanliness and asceptic surgical methods are observed as nearly as possible. Reflex action and inhibition of reflexes are studied with the pithed frog. The crawfish and earth-worm are also used in the study of the central nervous system.

Muscle. The student must familiarize himself with the electrical apparatus necessary for the work that follows; nerve muscle preparations are made, the different kinds of stimuli are studied, graphic records are made with the kymograph, showing certain phenomena of muscular contraction, among them a single muscular contraction or twitch; the effect of load; repeated stimulation; summation of stimuli, etc.

Haemodynamics. The artificial scheme used, which illustrates the mechanics of the circulation in the higher vertebrates, demonstrates arterial and venous pressure, and this is measured with mercury manometer. The scheme also shows the conversion of an intermittent stream into a continuous flow. Incompetence and stenosis of the mitral and aortic valves are demonstrated, and with the thistle tube and kymograph pulse-tracings are made that compare favorably with those made by members of the class with the sphygmograph. Abnormal cases are often included.

Normal Haematology. Clinical examinations of the blood are made including the enumeration of the blood corpuscles with the Thoma-Zeiss haemacytometer; the estimation of haemoglobin, with Fleischel's hemometer; the staining and fixing of blood corpuscles; the reaction and specific gravity of blood, etc.

The Special Senses. The anatomy, gross and minute, of the eye and ear and the physiology of these organs, are treated as fully as the time permits. During the year students dissect such mammals (dog, cat, and rabbit) as may be used to illustrate the lectures preceding and accompanying the practical work. Especial attention is given to the gross anatomy of the viscera, thoracic, abdominal and pelvic.

To a prospective student of medicine the advantages of this course can hardly be estimated. The additional training in Botany, Physics, Zoology, Osteology, Chemistry, Physiological Chemistry, and in experimental and laboratory work in Physiology, places him far in advance of those who have not pursued these studies. Fall Term, M., Tu., W., Th., F., 1:30.

Course Preparatory to the Study of Medicine. This course, leading to the degree of A. B., with Anatomy and Physiology as the major study, is

arranged to suit students who intend to enter upon a profession, and especially those who are to devote themselves to the study of medicine. A liberal education in the Arts and Sciences is of incaculable advantage to one intending to pursue the study of Medicine. It is a different 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: *Human Body*, Martin; 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*, Shaefer's *Physiology*, Hall's *Physiology*, American *Text-book*, Loeb's *Physiology of the Brain*.

GEOLOGY.

Professor Miller.

The department occupies one-half of the second floor of the Natural Science Building.

The Geological Laboratory is fitted up with tables and chairs, and 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, consiting of reports, both State and National, 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: I. *Elementary*

Geology. I-a. *Elementary Geology.* II. *Paleontology.* III. *Mineralogy.* IV. *Laboratory Physical Geography.* V. *Advanced Geology.* VI. *Economic Geology.*

I. 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 degrees of A. B. and B. S., except those for whom VI is prescribed. 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. Text-book: Blackwelder and Barrow's *Geology.* 2 hours per week, throughout the year.

I-a. 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. 3 hours per week, first term.

II. 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. 3 hours per week, first and second terms.

III. Mineralogy. The object of the study is to render the student familiar with the compositions 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 and third terms.

IV. 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 in the Fall and two in the Spring Term required. 2 hours per week, throughout the year.

V. Advanced Geology. The same topics are treated here as in I, but more thoroughly, as it is fitting such should be treated after the student has had courses II and III as well as work in other departments which

better fit him for an understanding of the deeper problems of geology. Two excursions in the Fall and Two in the Spring Term required. Text-book: Scott's *Introduction to Geology*. 2 hours per week, throughout the year.

VI. 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's *Economic Geology*, supplemented by lectures. 2 hours per week, first and second terms.

PHYSICS.

Professor Pence, Assistant Professor Webb, Mr. Spahr, Mr. Killebrew.

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 optics room, an apparatus room, a store-room, and photographic rooms.

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 (10 h. p.)—generator (5 kw. 125 v.), a smaller motor-generator, tanks for vacuum and compressed air, a compres-

sion 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.

I. General Physics. Text-book and recitations. For all students in engineering. 2 hours per week first term. 3 hours per week, second and third terms.

II. Physical Measurements. Measurements in the mechanics of solids, liquids, and gases, and in heat, sound, light, and electricity and magnetism. For students in Civil and Mining Engineering. 4 hours per week, throughout the year.

III-a. General Physics. Same as Physics I. For all students who have had one year's work in Physics except students in Engineering. 3 hours per week, first term. 2 hours per week, second and third terms.

III-b. General Physics. For students who have had no previous Physics. 3 hours per week, first term. 2 hours per week, second and third terms.

IV. Physical Measurements. Measurements in the mechanics of solids, liquids, and gases, and in heat. For students in Mechanical Engineering. 2 hours per week, second and third terms.

V. Physical Measurements. Same as Physics II. For students in the College of Arts and Science, and the College of Agriculture. 4 hours per week, throughout the year.

VI. Advanced Physics. First term, three hours per week. Lectures, text-book and recitations on mechanics, sound, and heat. For all students in engineering, and for students who take Physics as a major. Elective for others. Prerequisites: Physics I or III, and II. 3 hours per week, first term.

VII. Advanced Physics. Lectures, text-books, and recitations on electricity and magnetism, and light. For all students in engineering, and for others who take Physics VI. 3 hours per week, second and third terms.

VIII. Advanced Physical Measurements. Measurements to accompany Physics VI and VII. For students in Engineering and for students who take Physics as a major. 4 hours per week, throughout the year.

IX. Thesis. For students whose major is Physics.

X. Teachers' Course. A course of about five lectures for Seniors in the Department of Education. The teaching of Physics in Secondary Schools. Equipment of laboratories, and laboratory work.

C. SCHOOL OF CHEMISTRY.

Professor Tuttle, Professor Maxson, Dr. Daniels, Mr. Savage, and Mr. Ott.

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 is a necessary preliminary to the study of qualitative analysis. During the third term the student manufactures and purifies simple inorganic compounds.

Qualitative Analysis. This subject is studied in the laboratory during the first term, 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 begins with the second term and, with the ultimate analysis of organic compounds, extends through the third term of the Junior year. The laboratory course of study in the preparation and purification of typical organic compounds 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 courses, advanced guantitative 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.

Building 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.

COURSES OF INSTRUCTION

I. General Inorganic Chemistry. Lectures, laboratory work and class-room exercises. 5 hours per week, first term. 6 hours per week, second and third terms. (MAXSON, OTHERS)

Ia. Elementary Inorganic Chemistry. A course arranged to suit the needs of the students in the Two Year Course in Agriculture. Laboratory and class-room work. 2 hours per week, throughout the year. (SAVAGE)

II. Qualitative Analysis. Laboratory work accompanied by recitation periods. Must be preceded by Course I, or its equivalent. 4 hours per week, first term. (MAXSON, OTT)

III. Inorganic Preparations. A practical laboratory course devoted to the preparation of inorganic compounds from the crude material. 2 hours per week, third term. (MAXSON, OTT)

IV. Inorganic Chemistry. A more advanced course in inorganic chemistry, primarily for the students in the Course in Chemistry. 2 hours per week, first term. (MAXSON)

V. Organic Chemistry. An elementary course following Remsen's *Introduction to the Study of the Compounds of Carbon.* 2 hours per week, second and third terms. (DANIELS)

Va. Organic Chemistry. An elementary course of study for non-professional students. 2 hours per week, second and third terms. (DANIELS)

VI. Quantitative Analysis. A laboratory course accompanied by lectures and class-room exercises. Gravimetric and volumetric methods of analysis are studied in detail during the last two terms of the Sophomore and the first term of the Junior year. (TUTTLE)

VIa. Quantitative Analysis. A laboratory course accompanied by lectures and class-room exercises arranged for students in mining and metallurgy. 5 hours per week, second term. (TUTTLE)

VII. Agricultural Analysis. This course in quantitative analysis is arranged for students in the Course of Agriculture. The elements of quantitative analysis are studied with special reference to the constituents of soils, fertilizers and agricultural products. Prerequisites, Courses I and II. 5 hours per week, first term. (TUTTLE)

VIII. Organic Chemistry. A more advanced course of lectures and class-room exercises extending through the Junior year. 3 hours per week, first term. 3 hours per week, second term. 2 hours per week, third term. (DANIELS)

IX. Theoretical Chemistry. Lectures and recitations on the modern theories of physical chemistry. 2 hours per week, throughout the year. (MAXSON)

X. Organic Preparations and Analysis. A laboratory course in the preparation and analysis of typical organic compounds. Must be preceded by at least one term of Course VIII. 5 hours per week, second term. 4 hours per week, third term. (TUTTLE, DANIELS)

XI. Gas Analysis. A laboratory course in the analysis of illuminating, natural and flue gases, using the methods and apparatus of Hempel, Orsat and others. 1 hour per week, second term. 2 hours per week, third term. (SAVAGE)

XII. Advanced Quantitative Analysis. A laboratory course in the analysis of ores, alloys, slags, rocks, iron and steel. The chemistry of the methods employed is studied in detail. 5 hours per week, first term. (TUTTLE)

XIII. Water Analysis. In this course waters are examined to determine their suitableness for domestic and other purposes. 2 hours per week, first term. (TUTTLE)

XIV. Industrial Chemistry. In this course the chemistry of manufacturing process is studied in detail, and when possible, manufacturing establishments in the vicinity are visited. 2 hours, per week throughout the year. (DANIELS)

XV. Electrochemistry. Lectures and recitations on the theory and practical application of electricity to chemical industrial processes. 3 hours per week, first term. (MAXSON)

XVI. Physical Chemistry. Laboratory studies in physico-chemical measurements. 2 hours per week, third term. (MAXSON)

XVII. Journal Club. A weekly exercise for Seniors in the Course in Chemistry devoted to a study of current periodical literature and conferences. 1 hour per week, throughout the year. (MAXSON)

XVIII. Thesis. Laboratory work and collateral reading,w ith presentation of results in thesis form. 5 hours per week, second term. 4 hours per week, third term. (TUTTLE AND OTHERS)

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, is adapted to the preparation of the student for a life work in chemistry. It not only provides a foundation which in turn enables the one so trained to cope successfully with one or more of the intricate scientific or industrial problems of the day, but for the study of medicine or some other post-graduate course of study immediately at the termination of the four years' course, the services of the graduate are in demand at a remunerative salary in the various technical and educational institutions of the country. For schedule, see below.

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

FRESHMAN YEAR.

FIRST TERM.

		Credits
English I	English Composition	1.2
Mathematics I	Trigonometry	2.0
German I	Bierwirth's Elements of German	1.2
Botany I	General Botany	2.0
Chemistry I	General Inorganic Chemistry	2.0
		8.4

SECOND AND THIRD TERMS.

English I	English Composition	1.8
Mathematics II	Algebra	3.0
German I	Bierwirth's Elements of German	1.8
Chemistry I	General Inorganic Chemistry	3.6
Chemistry III	Inorganic Preparations	.6
		10.8

SOPHOMORE YEAR.

First Term.

		Credits
Mathematics III	Analytical Geometry	2.0
German II	Selections from German Prose and Poetry	1.2
Chemistry IV	Inorganic Chemistry	.8
Physics III	General Physics	1.2
Chemistry II	Qualitative Analysis	1.6
Physics V	Physical Measurements	.8
		7.6

Second and Third Terms.

German II	Selections from German Prose and Poetry	1.8
Chemistry VI	Quantitative Analysis	2.7
Chemistry V	Organic Chemistry (Elementary)	1.2
Physics III	General Physics	1.2
Mathematics III	Analytical Geometry	3.0
Physics V	Physical Measurements	1.5
		11.4

JUNIOR YEAR.

First Term.

		Credits
Chemistry VIII	Organic Chemistry (Advanced)	1.2
Chemistry VI	Quantitative Analysis	2.4
Chemistry IX	Theoretical Chemistry	.8
Political Science I	American Government	1.2
Political Economy I	Economics	.8
German III	Freshman German	.8
		7.2

Second and Third Terms.

Chemistry VIII	Organic Chemistry (Advanced)	1.5
Chemistry XI	Gas Analysis	.6
Chemistry IX	Theoretical Chemistry	1.2
Political Science I	American Government	1.8
Political Economy I	Economics	1.2
German III	Freshman German	1.2
Chemistry X	Organic Preparations and Analysis	2.7
Mineralogy III	Determination of Common Minerals	1.2
		11.4

SENIOR YEAR.

FIRST TERM.

		Credits
Chemistry XIV	Industrial Chemistry	.8
Chemistry XV	Electrochemistry	1.2
Chemistry XVII	Journal Club	.4
Philosophy I	Logic	.8
Geology I	Elementary Geology	.8
Chemistry XIII	Water Analysis	.8
Chemistry XII	Advanced Quantitative Analysis	2.0
		6.8

SECOND AND THIRD TERMS.

Chemistry XIV	Industrial Chemistry	1.2
Metallurgy		1.2
Philosophy I	Logic	1.2
Chemistry XVII	Journal Club	.6
Geology I	Elementary Geology	1.2
Chemistry XVIII	Thesis	2.7
Assaying		.6
Chemistry XVI	Physical Chemistry	.6
		9.3

D. SCHOOL OF EDUCATION.

Professors Noe, Tigert, and Rhoads, Associate Professor Bohannan.

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 school 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 Education 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 of 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 of 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 shall 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 Teachers' College consists in the courses in Educational Psychology, History of Education and Theory of Teaching. Practice work, observation and criticism have been arranged for.

A beginning has been made in Experimental Psychology, and a well lighted laboratory has been provided for this work in the basement of the education building. The department is arranging to increase the amount of the apparatus for extended experimental work in psychology and education, and hopes to make this important phase of the work both attractive and profitable to all students of education, and especially to graduate students.

An Educational Society has been formed by the students of this school for the study of educational problems. This is proving to be one of the livest societies connected with the State University, and is destined to produce great results in the future history of Kentucky education.

COURSES OF INSTRUCTION.

I. Elementary Educational Psychology. Education I is an introductory course in educational psychology. It deals with the broad fundamentals of psychology as it is related to the learning process. Lectures, text-book, and reports. 3 hours per week, throughout the year. (NOE)

II. Psychology. Education I, or its equivalent is pre-requisite for this course. A thorough course in Psychology for undergraduates is offered. Lectures, text-book and reports from parallel readings, together with some laboratory work. 3 hours per week, throughout the year. (TIGERT)

III. Philosophy of Education. This course alternates with the three

hour course in Psychology. Bagley's *Educative Process* is the basis of the work, but the text is supplemented by lectures and reports from students with discussions by the class. 2 hours per week, throughout the year. (NOE)

IV. Adolescence. Studies in Adolescence. Lectures on the physical, mental, moral, and social growth of the child and youth, as related to the various problems of education, such as interest, study, ideals, discipline, etc., will be given. 2 hours per week, third term. (NOE)

V. Ancient History of Education. This course begins a complete survey of the history of education, which is continued through courses VI and VII. In this term's work the attention is given to ancient education, Greece and Rome chiefly. Lectures and text-book works are used. There are no prerequisites in history of education. 3 hours per week, first term. (BOHANNAN)

VI. Medieval History of Education. A continuation of Course V, but V is not a prerequisite. This course is a study of the middle age period in European education. For character of course see V. 3 hours per week, second term. (BOHANNAN)

VII. Modern History of Education. A continuation of courses V and VI, but they are not prequisites. This course begins with the rise of modern educational doctrines and traces the growth of educational theories from Commenius and Locke to the present time. Lectures and text-book. 3 hours per week, third term. (BOHANNAN)

VIII. History of American Education. An attempt will be made in this course to study the development of the various institutions comprising our educational system together with their aims and curricula. For graduates and undergraduates. Prerequisite, Education V, VI, VII. 2 hours per week, first term. (BOHANNAN)

IX. Principles of Secondary Education. Lectures on the principles of Secondary Education, the organization of courses for the high school, studies, processes of instruction, etc. This course embraces practice teaching, observation and reports, discussions and criticisms. Education I, II, III, prerequisite. 2 hours per week, second term. (RHOADS)

Other Courses in Secondary Education. Special courses in the teaching of the several subjects of the high school, such as English, physics, history, etc., are offered by the various departments of the university. See the several departments for announcements of the courses.

X. European School Systems. This course will deal with the development, control and support of the educational systems of the leading European countries. Prerequisite, Education V, VI, VII. 3 hours per week, third term. (BOHANNAN)

XI. Public Education. This course will deal with the more important

aspects and problems of modern public education. It is intended not only for teachers but also for social workers and any others who desire to get in touch with our public educational system as it is. For undergraduates only. 3 hours per week, first term. (BOHANNAN)

XII. American Rural School. This course is designed especially for those who are preparing for positions as rural school supervisors. Others may enroll for the course by special consent of the instructor. A study will be made of: (a.) the historical development of the rural school as an institution; (b.) the support and control of rural education; (c.) the present status of the rural school—tendencies and problems. The work of the class room will be supplemented by field trips and reports. For graduates and undergraduates. Prerequisites, Education VIII and XI or their equivalents. 2 hours per week, second and third terms. (BOHANNAN)

XIII. Supervision of Public Instruction. This course is intended primarily for those wishing to fit themselves as city supervisors. In it will be considered the courses of study for elementary and secondary schools; the efficacy of teachers; and the work and duties of the supervisor. For graduates and undergraduates. Prerequisites, Education III, V, VI, VII and XI. 3 hours per week, second term. (BOHANNAN)

XIV. Principles of Social Education. This course is primarily for those taking Education major, but is open to students in other departments. Text-book, lectures, and reports throughout the year. 2 hours per week, throughout the year. (NOE)

XV. Advanced Principles of Education. This is a course in the genetic principles of education, based on the doctrine of evolution. It is designed to lay the basis for a scientific conception of education as a developing institution. Open to seniors who have taken Education II and III, and to graduates. 3 hours per week throughout the year. (NOE)

XVI. Seminary. Supervision and Administration. Special subject for 1913-14. Rural Education. 2 hours per week, throughout the year. (BOHANNAN)

XVII. Seminary. Problems in Education. Industrial Education, Moral and Religious Education, Kindergarten, etc. 2 hours per week, throughout the year. (NOE)

COLLEGE OF AGRICULTURE.

JOSEPH H. KASTLE, DEAN.

ORGANIZATION.

The College of Agriculture embraces:

1. The Experiment Station.
2. The School of Agriculture.
3. The School of Home Economics.
4. The School of Extension.

The work of the college is conducted along the following lines:

1. Research: to develop agricultural science through investigation and experiment.
2. Instruction to students at the University.
3. Extension: to disseminate information to citizens of the State.
4. Inspection.

COURSES OF INSTRUCTION.

The following courses have been arranged to meet the needs of students of the various classes:

1. Graduate Work in Agriculture.

In the College 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 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.

The Experiment Station is the Research Department of the College of Agriculture. As such it offers splendid 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 Station, where they will 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, subject to the approval of the Faculty of the College of Agriculture. Two or more minor subjects will be assigned by the faculty. At least one year's resident work at the University will be required of candidates for the degree of Master of Science in Agriculture, and 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. **Regular Four-year Course.**

The regular Course in the College of 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, dairying, entomology, horticulture, or Zoology.

3. **A Four-year Course in Home Economics.**

4. **Extension Courses.**

A. 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 divisions of work, namely, Administration; Agronomy, or the study of soils and crops; Animal Husbandry, including beef cattle, sheep, swine, 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., etc.; Feeds and Feeding Stuffs; Commercial Fertilizers; Foods and Drugs; Horticulture, including orcharding, cultivation under glass, and market and landscape gardening; Research; and Extension, including corn shows, agricultural schools and clubs, farmers institutes, press bulletins on agricultural topics and, indeed, all of those agencies by which the work of the Station and of the United States De-

partment of Agriculture are brought directly to the farmers in various sections of the State.

Among the investigations recently carried out in the Station laboratories and on the experimental farm, the following will serve to acquaint those interested with the general scope and character of this work:

Wheat, variety tests, etc.; the dipping of sheep for scabies; the soils of Webster County; corn production; infectious abortion in cows and mares and the diagnosis of the same; forage poisoning in stock; the woody plants of Kentucky, etc., 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 safe-guarding 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 and distribution of large amounts of hog cholera serum at less than the cost of production, the vaccination and inoculation of hogs against cholera, without expense to the owner, 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.

B. 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 45 x 100 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 dean and registrar and of the professor 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 large 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, 24 x 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 Division 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 in this College, an applicant must offer 15 units of credit as indicated on page 38 of this catalog. For further details regarding entrance requirements see page 40.

REQUIREMENTS FOR GRADUATION.

To receive the undergraduate degree, a matriculate in the College of Agriculture must offer 69 credit hours, 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 a "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 less than a year, the number of hours per week the subject is given is multiplied by .4 for the fall term and .3 for the winter or spring term. Credit will not be allowed students for summer work except by special arrangement in advance with the head of a department.

No student in the College of Agriculture will be permitted to take more than 18 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. Subjects for theses 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.

ELECTIVES.

An Elective is any course in the University not prescribed. Electives may be selected under the following conditions:

1. That at least one-half of the electives are to be taken from courses in the College of Agriculture.

2. That when a student intends to specialize in any one of the departments, he must select studies with the advice and approval of the head of the department and the Dean of the College of Agriculture. In the schedule of studies, Electives are printed without stars and are more fully outlined under departments of instruction.

3. Students not desiring to specialize in any particular department must arrange their course after consultation with their student adviser and the Dean of the College of Agriculture.

OUTLINE OF COURSES LEADING TO THE DEGREE B. S. IN AGRICULTURE.

FRESHMAN YEAR.

FIRST TERM.

	See Page		Credits
*English I	75	English Composition	1.2
*Chemistry I	95	Gen. Inorganic Chemistry—Lec. and Lab.	2.0
*Mathematics Ia	83	Trigonometry	1.2
German I or French I	85, 86	Elements of German or French Grammar	1.2
History I	80	Ancient History	.8
*Botany I	121	General Morphology—Lec. and Lab.	1.6

SECOND AND THIRD TERMS.

*English I	75	English Composition	1.8
*Chemistry I	95	Gen. Inorganic Chemistry—Lec. and Lab., (Qualitative Analysis)	3.6
*Agronomy VII	111	Elementary Agronomy	.6
German I or French I	85, 86	Elements of German, or French Grammar	1.8
History I	80	Ancient History	1.2
*Botany I	121	General Morphology—Lec. and Lab.	1.2
*Botany II	122	Systematic Botany—Lec. and Lab.	1.2
*Animal Husbandry I	114	Stock Judging	.9

*Required Subjects.

SOPHOMORE YEAR.

First Term.

	See Page		Credits
*Animal Husbandry II	114	Live Stock Judging	1.6
*English XXI	76	Literature of United States	.8
*Agronomy VIII	112	Cereals	1.6
*Entomology I	118	General Entomology	1.6
*Chemistry VI	95	Quantitative Analysis	2.0

Second and Third Terms.

*Entomology I	118	General Entomology	1.5
*English XXI	76	Literature of the United States	1.2
*Horticulture I	120	Principles of Plant Culture	.9
*Zoology II	119	Economic Zoology	1.8
Agronomy XV	112	Farm Mechanics	.9
*Geology Ia	91	Elements of Geology	.9
*Horticulture II	120	Principles of Fruit Growing	.9
*Agronomy X	112	Forage Crops	1.2
Rural Eng. II	123	Road Making	.6
Horticulture IV	121	Vegetable Gardening	.9
Surveying	123		.6
Animal Husbandry XIII	116	Live Stock Judging	.6
Agronomy IX	112	Management of Farm Crops in Relation to Diseases and Insect Pests	.45

JUNIOR YEAR.

First Term.

	See Page		Credits
*Agronomy I	111	Soil Physics	2.4
Veterinary Science I	124	Animal Health	.8
*Horticulture III	121	General Pomology—Lec. and Lab.	1.2
Agronomy XXI	113	Mechanics of Dairying	1.2
*Bacteriology I	117	General Bacteriology	.8
Agronomy XI	112	Special Crops	.8
Animal Husbandry VII	115	Milk Testing	1.6
Botany III	122	Plant Histology	1.2
Agronomy XIII	112	Advanced Grain Judging (Seed Testing)	.4 to .8
Agronomy XVI	112	Farm Machinery	2.0
*Rural Economics	...		.8
Entomology IV	118	Advanced Entomology	(hrs. by appt.)

*Required Subjects.

SECOND AND THIRD TERMS.

*Agronomy III	111	Soil Fertility	3.0
Veterinary Science II	124	Animal Anatomy and Physiology	.6
Agronomy XII	112	Field Crop Improvement	1.8
Bacteriology III	117	Bacteriology of Soil, Milk and Agricultural Products	.6
Animal Husbandry VIII	115	Dairying	1.5
Animal Husbandry VI	115	Feeding	.9
Agronomy XIV	112	Farm Management	.6
Animal Husbandy XVI	117	Beef Production	.9
Agronomy XVII	113	Power Machinery	1.5
Entomology IV	118	Advanced Entomology	(hrs. by appt.)
Agronomy II	111	Soil Physics	(hrs. by appt.)
Political Economy I	80	Economics	1.2
Veterinary Science III	124	Pathology	.6
Animal Husbandry XII	116	Stock Management	1.2
Animal Husbandry XV	117	Dairying	.9
Animal Husbandry XIV	116	Poultry	1.2
Agronomy XX	113	Drainage	.9
Agronomy XVIII	113	Machine Practice	.6
Bacteriology IV	117	Bacteria in Relation to Animal and Plant Diseases	.6
Agronomy XIX	113	Farm Construction	.9
Botany IV	122	Mycology	.9
Animal Husbandry X	116	Experiment Station Literature	.9

SENIOR YEAR.

FIRST TERM.

	See Page		Credits
Animal Husbandry IV	115	Study of Breeds	1.2
Animal Husbandry III	114	Principles of Breeding	1.6
*Botany V	122	Plant Pathology	1.2
Agronomy IV	111	Soil Fertility	(hrs. by appt.)
Agronomy XI	112	Special Crops	.8
Animal Husbandry V	115	Study of Breeds	.8
Agronomy XIII	112	Adv. Grain Judging; Seed Testing	.4 to .8

SECOND AND THIRD TERMS.

Animal Husbandry III	114	Principles of Breeding	1.2
Horticulture VI	121	Greenhouse Construction and Management	1.2
Botany VIII	123	Plant Physiology	1.8
Agronomy XIV	112	Farm Management	.6
Animal Husbandry XVI	117	Beef Production	.9
Animal Husbandry IX	116	Advanced Dairying	.9
Agronomy XVII	113	Power Machinery	1.5
Agronomy II	111	Soil Physics	(hrs. by appt.)
Plant Breeding I	119	Seed Analysis and Plant Breeding	1.8
Agronomy XX	113	Drainage	.9
Agronomy XIX	113	Farm Construction	.9
Agronomy XVIII	113	Machine Practice	.6
Horticulture V	121	Elements of Landscape Gardening	.6
	123	Thesis	
Animal Husbandry XI	116	Nutrition	.9

Required subjects.

DEPARTMENTS OF INSTRUCTION.

AGRONOMY.

Professor Roberts, Assistant Professors Kinney, Jones, Hendrick, and Instructor Kenney.

The courses in Agronomy are designed to acquaint the student with the fundamental principles of soil physics, soil fertility and the production of field crops. The work of the Department fits the student for farming, for the teaching of the subjects of the courses, and serves as a foundation for research training. The work in Farm Mechanics is included in this Department.

I. Soil Physics. The origin of soils; methods of soil formation; physical properties of soils with special refrence to soil management. Prerequisites: Chemistry I and Geology Ia. 2.4 credits. Lectures 3 hours; laboratory 6 hours. Fall Term. (JONES)

II. Soil Physics. Advanced course. Physical properties of special soils, such as the student may be interested in; mechanical analysis; moisture and temperature studies. Prerequisites: Agronomy I. Students should preferably be studying or have had Chemistry VII. Laboratory and assigned reading by appointment. Winter and Spring Terms. (JONES)

III. Soil Fertility. Nature and sources of plant food; crop requirements; manures and fertilizers; crop rotations; the effect of different systems of farming upon the productive capacity of soils. Prerequisites: Agronomy I. For laboratory, Chemistry VII. 3.0 credits. Lectures 3 hours; laboratory 4 hours. Winter and Spring Terms. (ROBERTS)

IV. Soil Fertility. Investigations of special soils; determination of manurial requirements by pot and plot tests; study of experimental results obtained by experiment station workers and other investigators. Prerequisite: Agronomy III. Lectures 3 hours; laboratory by arrangement. Fall Term. (ROBERTS)

V. Soil Physics; Course I. Adapted to the needs of special students and students in the two-year courses. Prerequisite: Chemistry Ia. Lectures 3 hours; laboratory 2 hours, for study of results obtained by four-year students. For second year students. Fall Term. (JONES)

VI. Soil Fertility; Course III. Adapted to needs of special students and students in the two-year courses. Prerequisite: Agronomy V. For second year students. Lectures 3 hours. Fall Term. (ROBERTS)

VII. Elementary Agronomy. This course is intended to give Freshmen four-year students an introduction to the subject of Agronomy. Students must be studying chemistry and botany. .8 credit. Lectures 2 hours. Winter Term. (KINNEY)

VIII. 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. Prerequisite: Agronomy VII. 1.6 credits. Lecture 3 hours; laboratory 2 hours. Fall Term. (KINNEY AND KENNEY)

VIIIa. Cereals. A course designed for special students and students in two year course. Lectures 3 hours; laboratory 2 hours. Winter Term. (KINNEY AND KENNEY)

IX. Management of Farm Crops in Relation to Diseases and Insect Pests. Prerequisites: Agronomy VII and VIII. .45 credit. Lecture 1 hour; laboratory 1 hour. Winter Term. (KINNEY AND KENNEY)

X. Forage Crops. A study of grasses, clovers and other forage crops. Adaptation, management and improvement. Prerequisites: Agronomy VII, VIII and IX. 1.2 credits. Lectures 3 hours; laboratory 2 hours. Spring Term. (KINNEY AND KENNEY)

Xa. Forage Crops. A course for special students and students in two-year course. Required in first year. .9 credit. Lectures 3 hours. Spring Term. (KENNEY)

XI. Special Crops. The production of tobacco, hemp, cotton, broom corn and other special crops. Elective for Juniors and Seniors in the four-year course and for special students and students in two-year course during their second year. .8 credit. Lectures 2 hours. Fall Term. (KINNEY AND SCHERFFIUS)

XII. 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 VII, VIII and IX. 1.8 credits. 3 hours per week. Winter and Spring Terms. (KINNEY)

XIII. Advanced Grain Judging; Seed Testing. Prerequisites: Agronomy VII, VIII, IX and X. .4 to .8 credit. 2 to 4 laboratory hours per week. Fall Term. (KINNEY AND KENNEY)

XIV. Farm Management. Elective for Juniors and Seniors and for special and two-year men during their second year. Lectures; recitations and assigned reading. .6 credit. 2 hours per week. Winter Term. (KINNEY)

XV. Farm Mechanics. An elementary course in farm mechanical operations, embracing the application of certain important definitions and principles to practical problems. Practice in the simpler mechanical operations on the farm; rope splicing, belt lacing, minor repairs, construction of simple farm equipment and conveniences. .9 credit. Lectures 2 hours; laboratory 2 hours. Winter Term. (FARRA)

XVI. Farm Machinery. A detailed study and comparison of the construction and operation of tillage, seeding, harvesting and storage machin-

ery, such that the student may acquire judgment in the selection and skill in the operation of this class of farm equipment. Prerequisite: Agronomy XV. 2.0 credits. Lectures 3 hours; laboratory 4 hours. Fall Term. (FARRA)

XVII. Power Machinery. A study of sources of farm power; its transmission and application to power driven machinery; the principles and operation of farm gas and oil engines, steam engines and boilers, sweeps, tread mills, wind and water motors, belts, shafting and farm power plants, including electric installations. Prerequisite: Argonomy XV. 1.5 credits. Lectures 3 hours; laboratory 4 hours. Winter Term. (FARRA)

XVIII. Machine Practice. Practice in the actual field operations of various types of farm machinery, including some of the farm motors. Prerequisites: Agronomy XV and XVII. .6 credit. Lectures 1 hour; practice 2 hours. Spring Term. (FARRA)

XIX. Farm Construction. The location, design, construction and cost of farm structures; the selection and use of materials, paints and preservatives; practice in the use of concrete; study of heating, lighting and ventilating by artificial and natural means; water supply and sanitary conveniences. .9 credit. Lectures 2 hours; laboratory 2 hours. Spring Term. (FARRA)

XX. Drainage. A study of the simpler farm drainage problems; the location of drains, ditches, etc.; leveling, digging, laying tile, filling and subsequent care; cost of construction and efficiency. Practice in the use of simple and inexpensive drainage instruments and implements. .9 credit. Lectures 2 hours; laboratory 2 hours. Spring Term. (FARRA)

XXI. Mechanics of Dairying. (Given especially for dairy students.) Instruction in the management, care and operation of steam and gas engines, refrigerating, pumping and lighting machinery; plumbing, soldering, etc. 1.2 credits. Lectures 2 hours; laboratory 2 hours. Fall Term. (FARRA)

ANIMAL HUSBANDRY.

Horses, Dairy Cattle, Poultry
Professor Hooper
Assistant Professor Nicholls
Assistant Nutter

Beef Cattle, Sheep, Swine
Professor Good
Assistant Professor Corbett

The courses in Animal Husbandry are designed to acquaint the students with the fundamentals underlying the breeding, feeding and management of domestic animals. The work has been arranged so as to prepare the students for practical live stock farming, for the teaching of the subjects of the courses, and for research work. This University is very fortunately located for instruction in live stock husbandry becasue of the extensive 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, which is perhaps the finest stock farm in America, having the best pure bred stock of all classes. Among the facilities at Elmendorf is one of the largest and best equipped dairy plants in the world.

A fine dairy herd of about thirty 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 are kept on this farm, all of which are available for student instruction.

Advanced students are frequently sent out from the College 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' Judging Contest at the State Fair and has liberally endowed it, and the American Saddle Horse Breeders' Association offers at the State Fair each year a handsome silver trophy for the Students' Saddle Horse Judging Contest.

I. Stock Judging. An elementary course in stock judging provided for Freshmen. .9 credit. Two lectures and one laboratory by appointment. Spring Term. (GOOD, HOOPER, CORBETT, NICHOLLS)

II. Live Stock Judging. Sophomore. In beginning this course the student is made familiar with the various market types of horses, cattle, sheep and swine. Different points of excellence of the perfect animal are considered. Animals representing the different market types are bought before the class, and the practical work is supplemented by the use of lantern slides, in connection with lectures. Visits are made each Saturday to the various stock farms near Lexington, and in December chosen members of the class visit the National Dairy Show and the International Live Stock Exposition at Chicago. During the course occasional demonstrations are provided for the purpose of studying different cuts of meat. Text-book: Craig's "*Judging Live Stock.*" 1.6 credits. Lectures, M., W., F., 8. Laboratory, Saturday a. m. Fall Term. (HOOPER, GOOD, NICHOLLS, CORBETT)

IIa. Stock Judging. Course II adapted to the needs of students in the two year course. Lectures, 9, M., W., F. Laboratory, 1:30, by appointment. 4 hours. Fall Term. (HOOPER, GOOD, NICHOLLS, CORBETT)

III. Principles of Breeding. Senior. The course embraces the study of the principles of breeding, including selection, heredity, atavism, variation, with a presentation of the methods of breeding, in-and-in breeding, cross-breeding, etc. The latter part of the term is devoted to the study of pedigrees of the best individuals in the more popular breeds of horses, cattle sheep, and swine. The student tabulates the results by means of registry books of the various breeder's associations. Text-book: Davenport's *Princi-*

ples of Breeding, numerous registry books, and reports of American Breeders' Association. 2.2 credits. Lectures, Tu., Th., F., 9. Laboratory, Th., 1:30. Winter Term, Tu., Th., 8. Spring Term, Tu., Th., 8. (HOOPER)

IV. Study of Breeds. (Horses and Dairy Cattle.) Senior. In this course the characteristics of each breed of horses and cattle 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 the horse, and cattle farms in the vicinity of Lexington, where representative animals are brought before the students. Text-book: Plumb's *Breeds of Farm Animals*. 1.2 credits. Lectures Tu., Th., 8. Laboratory Saturday. Fall Term. (HOOPER)

V. Study of Breeds. (Beef Cattle, Sheep and Swine.) Senior. This includes a comprehensive study of the origin, history, development, and breed type of each breed of beef cattle, sheep and swine. Text-book: Plumb's *Breeds of Farm Animals*. .8 credit. Lectures Tu., Th., 11:30. Fall Term. (GOOD, CORBETT)

VI. Live Stock Feeding. Junior. A comprehensive study is made of the various feed-stuffs offered in the local and general markets of the country, and the students are given training in compounding rations for the different animals of the farm. 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*. .9 credit. Lectures M., W., F., 9. Winter Term. (HOOPER, GOOD)

VII. Milk Testing. 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 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 also given in the use of the lactometer, in determining solids other than the fat, and the method of determining the acidity of milk. The dairy laboratory is provided with hand testers of several different makes, a large electric tester, a 24 bottle Turbine tester and with several kinds of lactometers and the necessary glass ware for this work. Text-book: Farrington & Woll's *Testing Milk and its Products*. Three lectures, one laboratory by appointment. Fall Term. (NICHOLLS)

VIII. Dairying. Junior. A study of the production and composition of milk, cream separation, pasteurizing and marketing. This is followed by the study of cream ripening and the manufacture of butter and cheese. The class-room work is supplemented by practical work in the dairy laboratory. Text-book: Michel's *Dairy Farming*. 1.5 credits. Lectures, M., W., F., 10:30. Laboratory, W., Th., 1:30. Winter Term. (HOOPER, NICHOLLS)

IX. Advanced Dairying. Senior. The course provides for Senior students who desire to specialize along dairy lines. The course consists of lectures, supplemented by collateral reading in Experiment Station, and other literature, together with practical work suggested by the student's readings, and his personal interests. This work will be performed at the University and at Elmendorf. .9 credit. Lectures, 2. Laboratory, 1. Winter Term. (HOOPER, NICHOLLS)

X. Experiment Station Literature. Junior. This course consists of a study of the results of experiments at the various Agricultural Experiment Stations in the country, as published in their bulletins, relating to the feeding and management of the various classes of domestic animals. Students will be given individual assignments of subjects of this character for the study of results of Station investigations, and will present these reports to the class for discussion and criticism. .9 credit. Three lecture hours. Spring Term. (HOOPER, GOOD)

XI. Animal Nutrition. Senior. 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*. Ref. text: Kellner's *Scientific Feeding of Animals*. .9 credit. Three lecture hours. Spring Term. (GOOD)

XII. Live Stock Management. Junior. This course includes a discussion of the proper methods of housing, feeding, and management of the different types of farm animals, the relation of crop rotation and management to the care and profitable handling of live stock, and the different methods of managing animals for specific purposes. This course also includes a study of construction of barns, silos, and other farm buildings, employed in the management of live stock. 1.2 credits. M., W., F., 8. Laboratory, Th., 1:30. Spring Term. (GOOD, HOOPER)

XIII. Live Stock Judging. Sophomore. This course is provided as an advanced study in live stock judging. The work is offered to those students who desire to specialize in animal husbandry. .6 credit. One lecture and one laboratory by appointment. Spring Term. (HOOPER, GOOD, NICHOLLS, CORBETT)

XIV. Poultry Husbandry. A department of poultry husbandry is being established by the College and this offers opportunity for instruction in the history and characteristics of the different breeds of fowls, in the feeding and management of poultry; in work connected with incubating and brooding, and a study of the construction of poultry houses. During this course, in addition to the work given in the lecture room and on the University farm, visits will be made to the poultry establishments near Lexington. Prerequisites:

Animal Husbandry, I and V. Text-book: Robinson's *Poultry Culture*. 1.2 credits. Three lectures and one laboratory period. Spring Term. (HOOPER)

XV. Dairy Husbandry. This course includes instruction in the rotation of crops, the arrangement of fields and buildings and a definite system of farm book-keeping for a dairy farm. The instruction also includes a study of the equipment required on a dairy farm where market and certified milk is produced. Prerequisites: Animal Husbandry, I, III, VI, and VII. Text-book: Lanes' *Business of Dairying*. .9 credit. Two lectures and one laboratory by appointment. Spring Term. (HOOPER, NICHOLLS)

XVI. Beef Production. The student pursuing this course will be taught the best methods of feeding steers and beef breeding 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*. Three lectures. Winter Term. (GOOD)

BACTERIOLOGY.

Assistant Professor Knapp.

I. General Bacteriology. Classification; morphology; physiology; cultivation and staining technique. .8 credit. Lecture third hour Tuesday; laboratory Saturday first and second hours. Fall Term.

II. Household Bacteriology. For students in Home Economics. Study of bacteria, molds, yeasts in relation to fermentation, decay, putrefaction, canning, etc. Principles of sterilization. .8 credit. Lecture 1 hour; laboratory 2 hours. Fall Term.

III. Bacteriology of Soil, Milk and Agricultural Products. .6 credit. Prerequisites: Course I or II. Lecture fourth hour, Tuesday; laboratory first and second hours, Saturday. Winter Term.

IV. Bacteria in Relation to Animal and Plant Diseases. .6 credit. Prerequisites: Courses I or II and III. Lecture fourth hour, Tuesday; laboratory first and second hours, Saturday. Spring Term.

ENTOMOLOGY AND ZOOLOGY.

Professor Garman, Miss Didlake, Miss McCann, Mr. Vaughn, Mr. Niswonger.

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 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 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. Special courses in either Entomology or Zoology are provided for under Entomology IV, and Zoology IV, V, VI, and VII.

ENTOMOLOGY.

I. General Entomology. This is required of students taking the four-year course in agriculture. 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. 4 hours, first term; 2 hours, second term; 3 hours, third term.
(GARMAN, MCCANN)

II. Economic Entomology. (2-year 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. 2 hours first term; 3 hours, second term; 2 hours, third term. (MCCANN, NISWONGER)

III. 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 diseases. 2 hours, first second and third terms. (GARMAN, MCCANN)

IV. 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 largly economic, ecological, anatomical, or systematic in its bearing. 8 hours, first, second, and third terms. (GARMAN, MCCANN)

V. 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. 2 hours, second term. (MCCANN, NISWONGER)

VI. Bee Keeping. While no special course in bee keeping is provided at present, colonies of some of the best varieties of bees are kept by the Division of Entomology and Botany of the Station, and permit students to acquire a practical acquaintance with approved methods of handling bees. Some lectures and laboratory work on the subject are provided in all of the agricultural courses. (GARMAN, VAUGHN)

PLANT BREEDING.

I. Seed Analysis and Plant Breeding. Seed Analysis may be taken under special arrangement in the Division of Entomology and Botany of the Experiment Station. The quarters and instruments for such instruction are somewhat restricted at present, and only students who have had sufficient botany and other work fitting them to become expert seed analysts will be received. 3 hours, second and third terms. (GARMAN, VAUGHN)

ZOOLOGY.

I. General Zoology. A general course in Zoology, involving lectures, demonstrations, recitations and some laboratory work. 1 hour, first, second and third terms. (GARMAN, DIDLAKE)

II. Economic Zoology. (4-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. 3 hours, second and third terms. (GARMAN, MCCANN, NISWONGER)

III. Economic Zoology. (2-year Agriculture.) A brief course largely economic and devoted to acquiring an acquaintance with animals of economic interest. 3 hours, first term. (MCCANN, NISWONGER)

IV. Invertebrate Zoology. The student studies the form and structure of typical representatives of each of the invertebrate sub-kingdoms and is given lectures on the systematic position, habits and development. Labor-

atory Text-book: Pratt's *Invertebrate Zoology*. A copy of this book is furnished to each student as a part of the laboratory equipment. One all-day field excursion is required. 6 hours, by appointment. (GARMAN, MCCANN)

V. Vertebrate Zoology. This is a course in vertebrate anatomy similar to No. 4 in invertebrates. Text-books: Pratt's *Vertebrate Zoology* and Jordan's *Manual of the Vertebrates of the Eastern United States*. Both books are furnished to students as a part of the laboratory equipment. 6 hours, by appointment. (GARMAN, MCCANN)

VI. Embryology. This course consists of lectures on the general facts and principles of embryology, accmpanied by practical work on the embryonic development of such vertebrates as the frog and chick. Text-books: Balfour's *Elements of Embryology* and Holmes' *Biology of the Frog*. 6 hours by appointment. (GARMAN, MCCANN)

VII. 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 hours, second and third terms. (GARMAN, NISWONGER)

HORTICULTURE AND BOTANY.

HORTICULTURE.

Professor Mathews, Assistant Professor Carmody.

I. Principles of Plant Culture. Sophomore. A review of the fundamental activities of plant life with special reference to the growth of farm 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 and reference books: Goff's *Plant Culture;* Bailey's *Lessons with Plants;* Bailey's *Nursery Book;* Percival's *Agricultural Botany*. .9 credit. Lectures, M., F., 9. Laboratory 1:30 by appointment. Winter Term. (MATHEWS, CARMODY)

II. Principles of Fruit Growing. Sophomore. A study of the principles and practice of home and commercial fruit-growing. It includes a consideration of the principles involved in location, climatic conditions, orchard plans, planting and management, harvesting, transportation, marketing, cold storage, etc. Text and reference books: Green's *Popular Fruit Growing;* Bailey's *Principles of Fruit Growing;* Goff's *Lessons in Fruit Growing;* Waugh's

Fruit Harvesting, Storing and Marketing; and others. .9 credit. Lectures, M., F., 8. Laboratory 1:30 by appointment. Spring Term.
(MATHEWS, CARMODY)

III. 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. Lectures, T., Th., 9. Laboratory one hour by appointment. 1.2 credits. Fall Term. (MATHEWS CARMODY)

IV. Olericulture or Vegetable Gardening. A study of the principles of vegetable-growing for home and market, considered with reference to culture in the field, and forcing under glass. Text and reference books: Watt's *Vegetable Gardening;* Bailey's *Principles of Vegetable Gardening;* Green's *Vegetable Gardening.* Numerous other books and pamphlets for reference. .9 credit. Lectures, T., Th., 10:30. Laboratory by appointment, 1:30. Spring Term. (MATHEWS)

V. Elements of Landscape Gardening. Senior. A discussion, largely illustrated by lantern slides, of the arrangement, planting and care of ornamental trees, shrubs and other flowering plants for the adornment of the grounds about the home. .6 credit. Lectures Tu., 11:30. Laboratory and field trips, 1:30 by appointment. Two hours per week, Spring Term. (MATHEWS)

VI. Greenhouse Construction and Management. Junior and Senior. 1.2 credits. Lecture and Laboratory hours by appointment. Two hours per week, Winter and Spring Term. (MATHEWS)

VII. The Home Garden and Grounds. For Juniors or Seniors in School of Home Economics. Text-book: Bailey's *Gardening.* Lectures 2 hours. Laboratory by appointment. Spring Term. (MATHEWS)

Meteorology. The Forecaster of the United States Weather Bureau located at the University, Mr. G. Harold Noyes, annually gives a number of lectures by appointment to students in agriculture upon the principles underlying weather forecasting, and its utility to the farmer and fruit or truck grower.

BOTANY.

Professor Mathews, Assistant Professors Gilbert and Knapp, Mr. McFarland.

I. General Morphology. Freshman. The work of the course comprises a general survey of the morphology and physiology of plants, and is designed to give the student who goes no further with the subject a comprehensive view of the entire vegetable kingdom, while for the student who will continue his botanical study, it is intended to afford a substantial

basis for more exhaustive special studies. While it is accompanied with lectures and recitations, the laboratory method is the form of instruction principally used, and from the beginning of this work the pupil is directed to the study of plants themselves, using the text-book as an aid to correct his mistakes and to enlarge his field of view. Text-book: Bergen and Caldwell, *Practical Botany*. Reference works: Campbell, *Evolution of Plants;* Coulter, Barnes and Cowles, *Text-book of Botany;* Strasburger, *A Text-book of Botany*. 2.8 credits. Lectures Tuesdays and Thursdays 11:30. Laboratory, two periods, 1:30. Laboratory assignments will be made in three sections, A, B and C. Fall Term. (GILBERT, KNAPP, MCFARLAND)

II. Systematic Botany. This course involves practice in the description and identification of the ferns and flowering plants, with special reference to those groups which are of economic importance. As in Course I, one or more field excursions may be required. Text-book: Gray's *New Manual of Botany* will be required for use in laboratory work. 1.2 credits. Lectures Tuesdays and Thursdays 11:30. Laboratory two periods by appointment. Spring Trem. (GILBERT, KNAPP, MCFARLAND)

IIa. Systematic Botany. Course especially arranged for two-year agricultural students. 1.2 credits. Two lectures, two laboratory periods. Laboratory manual same as in Course II. 4 hours Spring Term. (GILBERT, KNAPP, MCFARLAND)

III. Plant Histology. Junior. The student is given instruction in training in collodion, paraffin and other methods of preparing vegetable tissues for microscopic study. The preparation of twenty-five representative slides is required, and some time is given to the study of these slides. This course is valuable as a preparation for the study of Plant Physiology and Plant Pathology. Text-book: Chamberlain, *Methods in Plant Histology*. 1.2 credits. Lectures and laboratory, Monday, Wednesday, Friday, 10 to 12. Fall Term. (GILBERT)

IV. Mycology. This 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. Prerequisite: Course I. Course III is also recommended to precede this work. Text-book: Duggar's *Fungus Diseases of Plants*. .9 credit. Tuesday, Thursday, Saturday, 9 to 11. 3 hours Spring Term. (GILBERT)

V. Plant Pathology. Required of Senior agricultural students. A study of the pathological conditions of various agricultural plants, from the standpoint of distribution, host parasite and remedial measures. Prerequisite: Course I. Courses III and IV are also recommended. Text-book:

Duggar's *Fungus Diseases of Plants*. 1.2 credits. One lecture, two laboratory periods. Fall Term. (GILBERT)

VI. Plant Pathology. Elective to two-year agricultural students. This course will include such a study and consideration of plant diseases as will be helpful and practical for short course students. Prerequisites: Course VII. Text-book: Stevens and Hall, *Diseases of Economic Plants*. Two hours. 11:30 Monday, Wednesday. Winter Term. (GILBERT)

VII. Agricultural Botany. This course is arranged especially for two-year agricultural students. It includes a study of the elements of plant life and the fundamental processes of plants; also a brief survey of the plant kingdom with special reference to those groups which are of economic value. Text-book: Andrews' *Practical Course in Botany*. 1.6 credits. Lecture and recitation, Tuesday and Thursday, 10:30. Laboratory Tuesday and Thursday, 8 to 10. Fall Term. (MCFARLAND)

VIII. Plant Physiology. A laboratory course upon the normal physiology of plants, including observations and experiments concerning the various phenomena connected with plant activities. Prerequisite: Course I. Course III is also recommended as desirable to precede this work. Text-book: Duggar's *Plant Physiology*. 1.8 credits. Laboratory 8 to 10 Monday, Wednesday, Friday. Winter and Spring Terms. (MCFARLAND)

IX. Thesis. Students who are properly prepared may select special work in some field of Botany or Pathology to be carried on during the Senior year and concluded with the preparation of a written thesis. Three hours, throughout the year. (GILBERT)

RURAL ENGINEERING.

Professors Rowe and Terrell.

I. Land Surveying. Sophomore. 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. Laboratory W., F., 1:30. 2 hours per week, Spring Term. (ROWE)

II. Roads. Junior or Senior. Highways and highway construction. Road Material, Macadam Roads, Sand Clay Roads, Gravel Roads. Specifications for roads. Recitations, assigned readings and report. Lectures, M., F. 2 hours per week, Spring Term. (TERRELL)

Other Courses in the College of Civil Engineering are offered elsewhere in this catalogue.

VETERINARY SCIENCE.

Dr. Robert Graham.

I. Animal Health. Consists of a consideration of health and disease; the etilogy of disease predisposing and exciting causes; means and manner of propagation and transmission of infectious diseases; means, natural and artificial, by which animals resist disease; general hygiene and stable sanitation, including ventilation, drainage, selection of site and materials for construction. Elective for Juniors and Seniors. Two lectures, Tuesday, Thursday, 8 to 9, Fall Term.

II. Animal Anatomy and Physiology. A study of the anatomy of animals and the organs in health. Special stress is laid on conformation with reference to the common unsoundness. This work is supplemented by demonstrations from mounted skeletons, prepared specimens, charts, etc. A study of the conformation of the horse, with special reference to defects which exist and predispose to pathological changes causing unsoundness; comparison of normal and diseased parts; practical demonstrations upon the animal. Two lectures, Tuesday, Thursday, 8 to 9, Winter Term.

III. Pathology. This course includes a study of the common diseases of farm animals, their cause, treatment and prevention, dwelling mostly upon such affectations as tuberculosis, anthrax, black leg, forage poisoning, hog cholera, distemper, influenza, actinomycosis, glanders, infectious abortion, sheep scab, etc. Prerequisites, I and II. Two lectures, Tuesday, Thursday, 8 to 9. 2 hours per week, Spring Term.

C. SCHOOL OF HOME ECONOMICS.

The School of Home Economics has quarters in the Education Building to the left of the main entrance to the University campus. The office of the professors of Household Science are on the first floor. The office of the professor of Household Art, the laboratories for cookery and sewing, a laboratory for dietetics, two general lecture rooms and a store room occupy the third floor of this building. In the basement of the new Chemistry building is a well equipped laboratory for household and physiological chemistry.

The School of Home Economics is a department of the College of Agriculture. Students in this school receive instruction in certain subjects, such as bacteriology and entomology by the faculty of the College of Agriculture, and the Food Division of the Experiment Station gives students an opportunity to receive lectures on food sanitation and food adulteration.

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 general principles of Home Economics, and those who desire to take the full course leading to the degree of Bachelor of Science in Home Economics.

Besides the subjects prescribed in the course which are closely allied to Home Economics, such as chemistry, physiology, botany, bacteriology, etc., much time is given to language and history, giving the student a broad and liberal training. In the Junior and Senior years certain subjects may be elected subject to the decision of the Dean of the College.

OUTLINE OF COURSE IN HOME ECONOMICS LEADING TO THE DEGREE OF B. S. IN HOME ECONOMICS.

FRESHMAN YEAR.

First Term.

	See Page		Credits
English I	75	English Composition	1.2
Physics I (Spec.)	93	Household Physics	1.2
Chemistry I	95	Gen. Inorganic Chemistry—Lec. and Lab.	2.0
Household Science I	127	Foods and Principles of Cookery	1.2
German III	85	German Composition	1.2
			6.8

Second and Third Terms.

English I	75	English Composition	1.8
Physics I (Spec.)	93	Household Physics	.6
Chemistry I	95	Gen. Inorganic Chemistry—Lec. and Lab.	3.6
Household Science I	127	Foods and Principles of Cookery	.9
Household Science II	127	Home Cookery and Table Service	.6
German III	85	German Composition	[illegible]
			9.3

SOPHOMORE YEAR.

First Term.

	See Page		Credits
English	75	(Elective)	1.2
Household Arts I	129	Hand Sewing	1.2
Chemistry VI	95	Quantitative Analysis	2.0
German IV	85	Sophomore German	1.2
Botany I	121	General Morphology	1.6
			7.2

SECOND AND THIRD TERMS.

Household Arts II	129	Undergarments	.9
Household Arts III	129	Elementary Dressmaking	.9
Household Science IV	128	Practical Dietetics	1.8
Household Science V	128	Household Chemistry	2.4
Physiology I	88	General Physiology	1.2
Chemistry V	95	Organic Chemistry	1.2
German IV	85	Sophomore German	1.8
Botany I	121		1.2
Botany II	122		1.2
			12.6

JUNIOR YEAR.

FIRST TERM.

	See Page		Credits
Freehand Drawing VII	158		.8
Bacteriology II	117		.8
Political Economy I	80	Economics	.8
Household Science VI	128	Household Sanitation	.6
Household Art IV	129	Advanced Dressmaking	1.2
French I	86	Sophomore French	1.2
Chemistry XIV	96	Chemistry of Textile Manufacturing	.8
			6.2

SECOND AND THIRD TERMS.

Bacteriology III	117		.6
Zoology I	119	General Zoology	.6
Political Economy I	80	Economics	1.2
Household Science VI	128	Household Sanitation	.6
Household Science VIII	128	Human Nutrition	.6
Household Science III	127	Food Production and Manufacture	1.2
Household Art V	129	Home Decoration	.9
Household Art VI	129	Millinery	.9
French I	86	Sophomore French	1.8
Chemistry XVI	96	Chemistry of Textile Manufacturing	.6
Home Gardening	...		.9
			9.9

SENIOR YEAR.

FIRST TERM.

	See Page		Credits
English	75	Elective	.8
French I	86	Sophomore French	1.2
Political Economy I	80	American Government	.8
Household Science VIII	128	Human Nutrition	.8
Household Art VII	129	Tailoring	1.2
Household Art IX	130	Practice Teaching (Thesis)	1.2
			6.0

SECOND AND THIRD TERMS.

English	75	Elective	1.2
French I	86	Sophomore French	1.8
Household Science VIII	128	Human Nutrition	1.2
Household Science IX	128	Cooking and Diet in Disease	.6
Household Science X	128	Physiological Chemistry, Chem. of Digestion and Assimilation and Lab	1.2
Household Art VIII	130	Art Needlework	.9
Household Art IX	130	Thesis	.9
			7.8

Household Science, V, VIII, IX and X are not required of students specializing in Household Art, and Household Science IV may be taken in a later year. Household Art VII, VIII and IX are not required of students specializing in Household Science, and Household Art I, II and III may be put in their Junior schedule.

ELECTIVES.

Mathematics Ia	English
Sociology I	Education I, II and III
Dairying, Animal Husbandry VIII	Landscape Gardening
Animal Husbandry III	Horticulture
Animal Husbandry XI	Spanish
Agronomy VII	German
Geology I	French III
Chemistry X	Latin
History I and II	Greek

HOUSEHOLD SCIENCE.

Miss Sweeny, Miss Chinn.

I. Foods and Principles of Cookery. A study of foods, their chemical composition, kind and use; changes effected by heat, cold and fermentation; manufacture of foods and dietary combinations. 2.1 credits. Laboratory and lectures. 3 hours throughout the year. (MISS CHINN)

II. Home Cookery and Table Service. The purpose is to give opportunity for practice in home cookery. It will include a study of planning, cooking and serving of breakfasts, luncheons and dinners. .9 credit. 2 hours, Spring Term. (MISS CHINN)

III. Food Production and Manufacture. Lectures in this course describe the preparation of various staple foods from their raw state to the condition in which they reach the household, together with a discussion

as to their nutritive value and cost. Among the subjects considered are cereals, fruits, vegetables, sugar, meats, tea, coffee and dairy products. 1.2 credits. 2 hours, Winter and Spring Terms. (Miss Chinn)

IV. Practical Dietetics. 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 rations for limited sums of money. In the laboratory the student becomes familiar with measurements, food value and relative cost and nutritive value. Purchases are made and menus computed. Prerequisites: Household Science I and II, and General Chemistry. 1.8 credits. 3 hours, Winter and Spring Terms. (Miss Chinn)

V. 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, Quantitative and Qualitative Chemistry. 2.4 credits. Lectures and laboratory work. 2 hours, Winter and Spring Terms. (Miss Sweeny)

VI. Household Sanitation. This subject is studied by means of lectures dealing with the 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. 1.4 credits. 2 hours, Fall and Winter Terms. (Miss Sweeny)

VII. 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. .6 credit. 2 hours, Spring Term. (Miss Chinn)

VIII. Human Nutrition. Lectures and recitation upon the 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, economic and social conditions. Prerequisites: Bacteriology, Quantitative, Qualitative, Organic, and Household Chemistry. 2.4 credits. 2 hours, Spring Term. (Miss Sweeny)

IX. Cooking and Diet Disease. The course consists of practical demonstration of the preparation and cooking of food for convalescents. Lectures on the causes and physiological effects of disease, such as typhoid, tuberculosis, gout, diabetes and intestinal diseases. .6 credit. 2 hours, Spring Term. (Miss Sweeny, Miss Chinn)

X. Physiological Chemistry, Chemistry of Digestion and Assimilation. Lectures and laboratory. Presents essential chemical facts concerned in life processes; means of repair; growth. maintenance by the animal cell and

by the human body. The laboratory work will include experiments in fermentation, respiration, salivary, gastric, pancreatic and intestinal digestion; absorption; excretion. Prerequisites: General Chemistry, Organic Chemistry, Quantitative and Qualitative Chemistry, Household Chemistry. 1.2 credits. 2 hours, Winter and Spring Terms. (MISS SWEENY)

HOUSEHOLD ART.

Miss Buckman.

I. Hand Sewing. Freshman. Fundamental hand stitching, including patching, darning, making buttonholes, hemming, hemstitching and ornamental stitches. Study of history and manufacture of needles, pins, scissors, sewing machines, etc. Primitive conditions, implements, and materials. Lecture 1 hour, laboratory 4 hours, Fall Term.

II. Undergarments. Machine and hand sewing, drafting and making of patterns, cutting and making of undergarments. Study of cost, durability and suitability of materials and trimmings; comparison between ready made and home made undergarments. Growth, manufacture, characteristics, adulterations and chemical tests of cotton and linen, etc. Lecture 1 hour, laboratory 5 hours, Spring Term.

III. Elementary Dressmaking. Continuation of pattern drafting and beginning use of bought tissue patterns applied on shirt waist and simple wash dress. Study of growth, manufacture, characteristics, adulterations and chemical tests of woolen and silk. History of textile industries, etc. Lecture 1 hour, laboratory 5 hours, Fall Term.

IV. Advanced Dressmaking. Junior. Designing, cutting and making of wool and silk dresses or other fancy dresses. Continued study of textile materials. Removal of stains. Color and design in relation to dress. Cost of clothing. Lecture 1 hour, laboratory 5 hours, Fall Term.

V. Home Decoration. Planning and furnishing of a house at stipulated cost. Color plans made in water colors for the rooms. Stenciling applied on household articles. Study of color combinations, effect of color, and practical application in the home. Visits to stores and factories. Prerequisite: Freehand Drawing. Lecture 1 hour, laboratory 4 hours, Winter Term.

VI. Millinery. Elementary instruction in making and covering hat frames and in making trimmings. Study of materials used, renovating, identifying and grading. Lecture 1 hour, laboratory 4 hours, Spring Term.

VII. Tailoring. Senior. Making of suits and coats. The essentials of cutting. Fitting, pressing and finishing. Historic study of costumes. Lecture 1 hour, laboratory 5 hours, Fall Term.

VIII. Art Needlework. An advanced course in drafting especially in embroidery and crocheting applied on garments and household articles. History and manufacture of lace. Hand made distinguished from machine made laces. Artistic judgment in choice of color and designs. Lecture 1 hour, laboratory 4 hours, Winter Term.

IX. Practice Teaching. Spring Term.

X. Thesis.

D. SCHOOL OF EXTENSION.

Professor Bryant.

THE TWO-YEAR COURSE IN AGRICULTURE.

While it is felt that the four-year 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.

It is believed that an earnest young 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-year course, and has taken the work prescribed in the four-year 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.

SCHEDULE FOR TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

First Term.

		Hours per Week
English Ia	Agricultural English	3
Chemistry Ia	Agricultural Chemistry	2
Zoology III	Economic Zoology	3
Animal Husbandry IIa	Stock Judging	4
Botany VII—Lec. and Lab.	Agricultural Botany	4

Second and Third Terms.

		2d Term	3d Term
Agronomy VIIIa	Cereals	4	..
Agronomy Xa	Forage Crops	..	3
Botany IIa—Lec. and Lab.	Systematic Botany	..	4
English Ia	Agricultural English	3	3
Agronomy XV	Farm Mechanics	3	..
Chemistry Ia	Agricultural Chemistry	2	2
Horticulture I	Principles of Plant Culture	3	..
Horticulture II	Principles of Fruit Growing	..	3
Horticulture IV	Olericulture or Vegetable Gardening	..	3
Botany VI	Plant Pathology	2	..

SECOND YEAR.

First Term.

		Hours per Week
Entomology II	Economic Entomology	2
Veterinary Science I	Animal Health	2
Animal Husbandry III	Principles of Breeding	4
Horticulture III	General Pomology	3
Agronomy XI	Special Crops	2
Agronomy V	Soil Physics	5

Second and Third Terms.

		2d Term	3d Term
Entomology II	Economic Entomology	3	2
Veterinary Science II	Animal Anatomy and Physiology	2	2
Animal Husbandry III	Principles of Breeding	2	2
Veterinary Science III	Pathology	..	2
Agronomy XV	Farm Mechanics	..	2
Agronomy XIV	Farm Management	..	2
Agronomy XVII	Power Machinery	5	..
Agronomy XVIII	Machine Practice	..	2
Agronomy XX	Drainage	..	3
Animal Husbandry XII	Live Stock Management	..	4
Animal Husbandry VI	Live Stock Feeding	3	..
Animal Husbandry XV	Dairy Husbandry	..	2
Animal Husbandry XIV	Poultry Husbandry	..	4
Animal Husbandry VIII	Dairying	5	..
Animal Husbandry X	Experiment Station Literature	..	3
Agronomy VI	Soil Fertility	3	..

THE FARMERS' SHORT COURSE.

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 Corn Show and dairy show. Each stock breeders' association has its own program, which is largely furnished by the faculty of the Agricultural College 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 IN HOME ECONOMICS.

This course is given during the "Farmers' Week," being especially designed for the wives and daughters of farmers. It consists of lectures and demonstrations on such subjects as cooking, serving, home arrangement, home decoration, home sanitation, textiles, and sewing.

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 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 week of January of each year and extends through a period of ten weeks, thus coming at a time when the farmers' sons can most easily be spared from service at 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 young man upon the business side of farming, not especially in the direction of academic scholarship, there are no examinations for 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.

COLLEGE OF CIVIL ENGINEERING.

WALTER E. ROWE, DEAN.

Organization.

The College of Civil Engineering is composed of the School of Civil Engineering and the School of Highway Engineering.

Equipment.

The home of the College of Civil Engineering is in the Civil Engineering and Physics Building. This building is a large three-story brick, trimmed with cut stone, and has a floor area of about forty thousand square feet. The lecture rooms, laboratories, drafting rooms, and the offices are located in this building.

The field and office equipment belonging to the College of Civil Engineering consists of thirteen transits, six engineer's levels, two solar attachments, one needle compass, one plane table, one precise pantograph, one planimeter, one Thatcher computing machine, one set of splines, six hand levels, one sextant, one aneroid barometer, one cement testing machine, one set of railroad curves, level rods, cross-section rods, tapes, flags, and minor accessories.

The library for the use of engineering students contains a well-selected supply of standard literature and periodicals pertaining specially to engineering, and to this library additions are constantly being made.

The Transit—For the past six years the students of the College of Civil Engineering have published the "Transit," a monthly University publication.

Brooks 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.

Aims.

The course of Civil Engineering is planned to give the student a knowledge of the subjects which enable him to develop into a skillful practitioner in any of the branches of his profession.

So far as possible, the importance of each subject taught is illustrated by its application to actual practice. An effort is made to make the course valu-

able, from both a professional and an educational standpoint; therefore, while the student is learning each subject theoretically and practically, the training of his mind as well as the needs of the profession are kept in view. In addition to the purely technical matters included in the course, provision is made for the study of English, Mathematics, Physics, Chemistry, Geology, History and Economics.

Degrees.

The courses of study in Civil Engineering lead to the degree of B. C. E. (Bachelor of Civil Engineering).

The advanced degree of C. E. (Civil Engineer) may be granted to a resident student in one year from the date of taking the B. C. E. degree at the University, or at any other institution of equal requirements, provided the work assigned has been satisfactorily completed, the required examinations passed, and an acceptable thesis presented.

For the degree of C. E. a major study must be selected from Railway Location and Construction, Yards and Terminals, Motive Power and Rolling Stock, Railway Operations and Management, Metallic Arches, Bridge Design, Reinforced Concrete, Water Power Development, Municipal Engineering, and minor studies will be assigned from Mathematics, Astronomy, Mechanical Engineering, Mining Engineering, Engineering Jurisprudence, Geology, Chemistry, Physics, Political Economy, English, French and German.

The advanced degree of C. E. (Civil Engineer) may also be granted to a non-resident student, who is a graduate of the University, three years after graduation, if the candidate has been engaged in practical engineering work during that time, passes the required examinations, and presents an acceptable thesis.

A. SCHOOL OF CIVIL ENGINEERING.

SCHEDULE OF FOUR-YEAR COURSE LEADING TO THE DEGREE OF B. C. E.

FRESHMAN YEAR.

FIRST TERM.

	See Page		Credits
Mathematics I	83	Trigonometry	2.0
English I	75	English Composition	1.2
Drawing	139	Lettering and Geometrical Problems	1.4
Physics III	93	General Physics	1.2
Chemistry I	95	General Inorganic Chemistry	2.0
			7.8

SECOND AND THIRD TERMS.

Mathematics II	83	Algebra	3.0
English I	75	English Composition	1.8
Physics III	93	General Physics	1.2
Surveying	141	Land Surveying	1.2
Drawing	139	Lettering and Geometrical Problems	2.1
Chemistry I	95	General Inorganic Chemistry	3.6
Field Practice	142	....	....
			12.9

SOPHOMORE YEAR.

FIRST TERM.

	See Page		Credits
Applied Mechanics and Hydraulics I	137	Elementary Strength of Materials	2.0
Applied Mechanics and Hydraulics II	138	Elementary Mechanics	.8
Physics VI	93	Advanced Physics	1.2
Mapping	141	....	.8
Surveying	141	Advanced Surveying	1.2
Mathematics III	83	Analytical Geometry	2.0
Chemistry Lab	95	....	....
Field Practice	142	Practice with Transit and Level	1.0

SECOND AND THIRD TERMS.

Drawing II	139	Descriptive Geometry	3.0
Physics VI	93	Advanced Physics	1.8
Mathematics IV	83	Calculus	3.0
Mathematics III	83	Analytical Geometry	3.0
Bridge Eng. II	138	Roof Truss Design	1.5
Field Practice	142	Practice with Transit and Level	3.0

JUNIOR YEAR.

FIRST TERM.

	See Page		Credits
Bridge Eng. III	138	Bridge Stresses	1.2
Applied Mechanics and Hydraulics V	138	Hydraulics	.8
Mechanics III	138	Advanced stength of Materials	2.0
Mathematics IV	83	Calculus	2.0
Graphic Statics	...	....	....
Surveying II	141	Topographical Surveying	....

SECOND AND THIRD TERMS.

Bridge Eng. III	143	Bridge Stresses	1.2
Applied Mechanics and Hydraulics IV	138	Analytical Mechanics	3.0
Railway Eng. II	141	Railway Location	1.5
Railway Eng. III	141	Railway Construction	1.5
Geology VI	92	Economic Geology	....
Mathematics V	83	Spherical Trigonometry	.9
Graphic Statics	...	.....	....
Bridge Eng. VII	139	Bridge Design	3.0
Construction II	139	Masonry Construction	....
Metallurgy XV	172	Metallurgy of Iron and Steel	.9
Metallurgy I	170	Assaying	.6
Railroad	141	.....	....
Field Practice	142	.....	....

SENIOR YEAR.

FIRST TERM.

	See Page		Credits
Surveying and Geodesy III	141	Geodesy	.8
Construction II	139	Masonry Construction	....
Construction III	139	Reinforced Concrete	2.0
Railway Eng. IV	141	Railway Maintenance	1.2
Bridge Eng. II	143	Bridge Design	....
Political Science I	80	American Government	1.2
Railway Eng. III	141	Railway Construction	2.0

SECOND AND THIRD TERMS.

Municipal and Sanitary Eng. I	140	Water Supply	.6
Municipal and Sanitary Eng. I	140	Hydraulic Machinery	.9
Municipal and Sanitary Eng. V	140	Roads, Streets and Pavements	1.5
Political Science I		American Government	.9
Railway Eng. III	141	Railway Construction	2.4
Municipal and Sanitary Eng. II and III	140	Sewerage and Sewer Design	1.5
Law of Contracts	140	Specifications	....
Specifications and Thesis II	140	.....	....
Specifications and Thesis III	140	Thesis	....

DEPARTMENTS OF INSTRUCTION.

APPLIED MECHANICS AND HYDRAULICS.

I. 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. 5 hours per week, first term. (TERRELL)

II. Elementary Mechanics.—Concurrent forces; parallel forces; center of gravity; resistance and work; simple machines; gravity and motion; inertia and rotation. 2 hours per week, second and third terms. (TERRELL)

III. Advanced Strength of Materials.—A study of the principles and applications to engineering of the mechanics of solids, as related to the mutual actions, motions, pressures, strength, stiffness, and resilience of the members of structures and machines. 5 hours per week, first term. (FRANKEL)

IV. Analytical Mechanics.—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. 5 hours per week, second and third terms. (FRANKEL)

V. 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 and nozzles, over wires and through pipes and open channels, also the loss from friction and other sources. 2 hours per week, first term. (CARREL)

VI. Irrigation and Drainage.—Grades, cross-section and capacity of canals; surveys, design of structure, dams, conduits, levees, etc. Lectures, readings and collateral reports. 2 hours per week, second term. (ROWE)

VII. Material Laboratory.—Testing of wood, iron, steel, and cement. This course is given in connection with the work in Advanced Strength of Materials. 4 hours per week, first term. (CURTIS)

BRIDGE ENGINEERING.

I. Structural Drafting.—The work in structural drafting consists of fifteen plates of structural details. This course is completed before any other work of a structural nature is undertaken. 5 hours per week, first term. (CARREL)

II. Roof Truss Design.—The design of a simple steel roof truss is taken up and designs sheets and complete detail sheets are made and traced. 5 hours per week, first term. (ROWE)

III. 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, American bridge trusses, bridge bracing members and floors. 3 hours per week, first and second terms. (CARREL)

IV. Bridge Stresses.—Graphic Method. Principles and methods, roof trusses, bridge trusses, locomotive wheel loads, trusses with broken cords, miscellaneous trusses. 9 hours per week, second term. (CARREL)

V. Structural Details.—Methods of proportioning individual members of framed structures, and the design of joints and splices in steel and wooden structures; design of a plate girder bridge; practice in making complete shop drawings. 2 hours per week, second term. (CARREL)

VI. Metal Construction.—The study and design of mill buildings are taken up and also the study of railroad trestles, mine structures, grain elevators, towers, tanks, etc. 5 hours per week, second term. (CARREL)

VII. Bridge Design.—Theory and design of steel structures, including complete design for highway and railway bridges. (CARREL)

CONSTRUCTION.

I. Tunneling.—A study of the principles of tunneling, and of the methods employed in constructing some of the noted tunnels. 3 hours per week, second term. (ROWE)

II. 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, and the application of the principles of Descriptive Geometry to problems in stone cutting. 5 hours per week, first term. (TERRELL)

III. Reinforced Concrete.—Determination of forms and proportions. Lectures, recitations, computations, and drawings. Design of columns, beams, and also a complete design of an arch of reinforced concrete construction, including its abutments and centering. 5 hours per week, first term. (ROWE)

IV. Cement Testing and Handling.—In this course students are given cement testing and also actual practice in handling cement in making walks, curbs, foundations, hollow block, and reinforced slabs. 2 hours per week, third term. (TERRELL)

DRAWING.

I. Lettering and Geometrical Problems.—Detail and dimension drawing, pen topography, free-hand and mechanical lettering. 7 hours per week, throughout the year. (NOLLAU)

II. Descriptive Geometry.—A study of the representation of lines, planes, surfaces, shades, shadows, and perspectives. Lectures, recitations, drawings, and assigned problems. 10 hours per week, second and third terms. (NOLLAU)

III. Stereotomy.—Plane-sided surfaces, structures containing developable surfaces, structures containing double curved surfaces. 10 hours per week, second term. (CARREL)

LAW OF CONTRACTS, SPECIFICATIONS AND THESIS.

I. Contracts.—Offer and acceptance; consideration; contracts under seal; assignments; joint and several contracts; the statute of frauds; conditions; impossibility; illegality; discharge of contracts. 2 hours per week, first term. (ROWE)

II. Specifications.—A detailed study of various specifications. The student is required to write several specifications. (ROWE)

III. 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.

MUNICIPAL AND SANITARY ENGINEERING.

I. Water Supply and Waterworks Design.—Requisites of supply, source of supply; rainfall; surface water; rivers and lakes; ground water; gravity systems; pumping systems; dams and embankments; purification of water; pumping and pumping engines; design, construction, maintenance. 2 hours per week, second term. (ROWE)

II. Sanitary Engineering.—Sewerage systems, separate and combined; hydraulics of sewers; determination of size and capacity; surveys for drainage systems, designs of system in detail; specifications and estimate of cost; inspection of work; methods of disposal, irrigation, filtration, chemical precipitation; bacteriological methods; house drainage, garbage disposal. 2 hours per week, second term. (CARREL)

III. Sanitary Design.—This course consists of the study and preparation of maps, profiles, detail of manholes, flush tanks, catch basins, and all other details necessary to make up a complete design for the collection and purification of sewerage. 3 hours per week, second term. (CARREL)

IV. 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. 3 hours per week, second term. (TERRELL)

V. Streets and Pavements.—Pavements; material employed in the construction of pavements; resistance to traction. Lectures, assigned readings and reports. 2 hours per week, second term. (TERRELL)

RAILWAY ENGINEERING.

I. Railroad Curves.—An elementary course in the theory of railway curves, with sufficient field practice to give familiarity with field methods. 1 hour per week, first term. (ROWE)

II. Railway Location.—This course consists of the study of economic methods of railway location, together with the actual location of a railway line several miles in length, including reconnaissance, preliminary survey, topography, maps, projecting the location, making approximate estimates and final location. 2 hours per week, first term. (ROWE)

III. 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 estimate. A complete estimate of quantities and cost of line will be made. 5 times per week, third term. (ROWE)

IV. 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. 3 times per week, first term. (ROWE)

V. Economics of Railway Operation.—Organization. Relation of management and operation departments to construction and maintenance departments. Block signaling and interlocking. Rapid transit. Employment, education and discipline of force. Accounts and accounting. Reports. Betterments. 2 hours per week, third term. (ROWE)

SURVEYING AND GEODESY.

I. 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. 2 hours per week, second and third terms. (TERRELL)

II. Topographical Surveying.—The use of the hand level, the theory and use of the stadia and other instruments employed in making a topographical survey are studied; also the methods of topographical surveying. A complete topographic survey is made based on a system of triangulation, including the calculations, and completing as well as platting the map. 13 hours per week, first term. (ROWE)

III. Geodesy.—Base-line measurements, measurements 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. 3 hours per week, first term. (ROWE)

IV. Method of Least Squares.—Method of least squares as used in the adjustment of errors. This work is given in connection with Geodesy. 3 hours per week for 5 weeks, first term. (ROWE)

V. Field Practice.—All students taking Surveying or Railway Engineering work, will be required to spend two weeks in camp. The period set apart for camp duty will begin with the first Saturday in May, and continue for two weeks.

COURSES FOR GRADUATES.

The following lines of study are available for candidates for the advanced degree in Civil Engineering:

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.

B. SCHOOL OF RURAL AND HIGHWAY ENGINEERING.

Professors Rowe and 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 Universities.

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 Judge 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 Rural and Highway Engineering will be required to have a good knowledge of English, Arithmetic, Elementary Algebra, Elementary Physics and Plane Geometry. Students taking the course in Rural and Highway Engineering will not be considered candidates for a degree.

DEPARTMENTS OF INSTRUCTION.

APPLIED MECHANICS.

I. 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.

II. Elementary Mechanics.—Concurrent forces; center of gravity, resistance and work; simple machines; gravity and motion; inertia and rotation. 2 hours per week, second and third terms. (TERRELL)

BRIDGE ENGINEERING.

I. Bridge Stresses.—The subject of bridge stresses will be taken up from both an analytical and graphical standpoint as outlined in the course offered to civil engineering students.

II. Bridge Design.—Complete design of various types of steel highway bridges will be made, including weight and probable cost of structure. 5 hours per week, first and second terms.

III. Reinforced Concrete Bridge Design.—The complete design of a reinforced concrete bridge, together with centering and estimate of cost of structure. 5 hours per week, third term. (TERRELL)

CEMENT AND ITS USES.

I. Study of Cement.—A study of the properties and uses of cement in making walks, curbs, building blocks, silos, fence posts, and general farm dwellings. Lectures and laboratory practice. 5 hours per week, first term. (TERRELL)

II. Cement Testing.—Testing various samples of cement for tension and compression. 1 hour per week, second term. (TERRELL)

III. 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. 5 hours per week, second term. (ROWE)

COMPARATIVE STUDY OF ROAD LAWS AND RECENT ROAD LEGISLATION.

I. Road Laws.—This course of study consists of a systematic study of the road laws of the various States. 2 hours per week, third term. (TERRELL)

DRAWING.

I. Mechanical Drawing.—Geometrical drawing, geometrical problems, detail and dimension drawing, pen topography, freehand and mechanical lettering. 13 hours per week, throughout the year. (TERRELL)

II. Framed Structures.—Design of dwelling houses and other framed structures, together with plans and specifications and estimate of probable cost. 5 hours per week, second term. (TERRELL)

HIGHWAY ENGINEERING.

I. Highway Location.—Principles and methods followed in locating highways. Location of several miles of road. 5 hours per week, second term. (TERRELL)

II. 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. Methods of determining the final quantities. 5 hours per week, third term. (TERRELL)

III. Highway Maintenance.—A study of the best methods to be fol-

lowed in maintaining and keeping highways and bridges in good repair. Lectures, assigned readings, and reports. Inspection of roads in the vicinity of the University. 3 hours per week, second term. (TERRELL)

MUNICIPAL AND SANITARY ENGINEERING.

I. Water Supply and Water Works Design.—See course in Civil Engineering.

II. Sanitary Engineering.—See course in Civil Engineering.

III. Sanitary Design.—See course in Civil Engineering.

IV. Farm Sanitation.—Design for special problems; plumbing; water closets, baths, urinals, sewerage disposal, water supply. Recitations, assigned readings, lectures and designs. 2 hours per week, second term. (TERRELL)

V. Streets and Pavements.—Pavements; material used in the construction of pavements; resistance to traction. Lectures, assigned reading and reports.

SURVEYING.

I. 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. 2 hours per week, second and third terms. (TERRELL)

II. Topographical Surveying.—The use of the hard level, the theory and use of the stadia and other instruments employed in making a topographical survey are studied; also the methods of topographic surveying. 13 hours per week, first term. (ROWE)

SCHEDULE FOR COURSE IN RURAL AND HIGHWAY ENGINEERING.

FIRST YEAR.

First Term.

		Hours per Week
Drawing I	Mechanical Drawing	13
Mathematics I	Trigonometry	5
Physics I	General Physics	5

Second and Third Terms.

Bridge Engineering I	Structural Drafting, 2nd term	5
Mathematics II	Advanced Algebra	5
Physics I	General Physics, 2nd term	5
Surveying I	Land Surveying	2
Highway Engineering I	Highway Location, 2nd term	5
Physics II	Physical Measurements, 3rd term	5
Drawing I	Mechanical Drawing	13
Mapping	..... 3rd term	5
Surveying V	Field Practice	..
Highway Engineering II	Highway Construction, 3rd term	5

SECOND YEAR.

First Term.

Highway Engineering III	Highway Maintenance	5
Surveying II	Topographical Surveying	13
Bridge Engineering	Bridge Stresses	5
Surveying V	Field Practice	..
Highway Law	.....	5

Second and Third Terms.

Municipal Engineering V	Streets and Pavements, 2nd term	5
Cement and I	Study of Cement, 2nd term	5
Cement and Its Uses III	Reinforced Concrete, 2nd term	5
Bridge Engineering II	Highway Bridge Design	5
Drawing I	Mechanical Drawing	..
Law of Contracts, Specifications and Thesis I	Contracts	..
Law of Contracts, Specifications and Thesis II	Specifications	..
Retaining Walls	..... 3rd term	..
Construction II	Masonry Construction, 3rd term	5
Surveying V	Field Practice	5

COLLEGE OF MECHANICAL AND ELECTRICAL ENGINEERING.

FREDERICK PAUL ANDERSON, DIRECTOR.

INTRODUCTORY STATEMENT.

This 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 into bridges and buildings; the physical testing of all classes of building materials; steel making in all of its branches; glass making; heating and ventilating; 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 the 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 tution 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 admirably 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 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 fifteen 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 seven lathes, two milling machines, one planer, one shaper, two drilling machines, one dry emery grinder, one wet emery grinder, one universal grinding machine, two sensitive drills, twelve

vices for bench work in metal, an air compressor, some pneumatic tools, and a small punch and shear.

The tool room is equipped with a 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 accomodation of the students.

Drawing Rooms.

Three well lighted and convenient drawing rooms are provided, one for freshman and sophomores, one for juniors and one for seniors.

Recitation Rooms.

The recitation rooms are as follows: senior steam engineering, senior and junior electrical engineering and junior applied mechanics. 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 scholarship engineering society 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 enlargements are first class.

Blue Print Laboratory.

The whole 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 and private laboratories are provided for instructors.

STEAM AND GAS ENGINEERING LABORATORY.

The steam engineering laboratory is equipped with indicators, planimeters, gauges, pyrometers, reducing motion apparatus, scales, micrometers, tachometers, and other small apparatus. It contains a 40-horsepower Houston, Stanwood and Gamble cross-compound throttling engine, a 10-horsepower Corliss engine, a 25-horsepower Buffalo Forge engine, a 35-horsepower Westinghouse single-acting compound engine, a small slide-valve engine for elementary experimental work in valve setting, a small engine with a Stephenson valve gear, and a 10-horsepower De Laval turbine. There are also two 4-horsepower Fairbanks-Morse gasoline engines with gas attachments, and the necessary auxiliary apparatus for testing, a 35-horsepower Atlas automatic cut-off engine, a 150 horsepower Buffalo Forge tandem compound engine, a 200-horsepower 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.

In the future much attention will be paid to automobile engineering by the University.

There are two separate boiler houses. One contains a 50-horsepower 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-horsepower 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.

Alternating Current Generators.

One 7.5 kw. 220-volt, 2 or 3 phase, 60 cycle, Willey.
One 33 kw. 1100-volt, single phase, 133-cycle, Fort Wayne.
One 50 kw. 1100-volt, single phase, 133-cycle, Westinghouse.
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-horsepower, single phase, 60-cycle, 110-volt, General Electric induction motor; two 5-horsepower, 60-cycle, 220-volt 2 and 3 phase induction motors, loaned by the James Clark, Junior Electric Company; one Emerson ½-horsepower, 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; Westinghouse induction type; Fort Wayne induction type; Sangamo mercury type; Duncan commutator type.

Portable Indicating Instruments.

One industion 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 electrodynamometer 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 dynamometer; one vacuum pump; two Wheatstone bridges; one standard condenser; four condensers

made in the shops; two Universal Manufacturing Company flat rate controllers; two 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 MATERIAL LABORATORY.

The facilities for the study of the physical characteristics 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 Engineering, as administered at the State University of Kentucky, may be considered as being divided into three parts, as follows:

1. **Mechanical Engineering Proper.** Under this heading come the studies of steam engineering practice, the operation and design of gas engines and producers, and the operation and design of all classes of machinery.

2. **Chemical Engineering.** This is intended especially for those who will engage in the production of iron and steel, and involves study of the various methods of analysis of iron, steel, coals, fluxes and refactory substances.

3. **Electrical Engineering.** This involves the study of the design and operation of electrical apparatus and machinery.

The foregoing is a general classification. Each of the subjects mentioned permits of further subdivision to suit the needs of the student.

DEGREES.

The courses of study in Mechanical and Electrical Engineering all lead to the degree of B. M. E. (Bachelor of Mechanical Engineering). The advanced degree, M. E. (Mechanical Engineer), or E. E. (Electrical Engineer), may be obtained by a resident student in 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 Faculty that post-graduate work is being done and the work must be approved by the Faculty.

MECHANICAL AND ELECTRICAL ENGINEERING COURSE LEADING TO THE DEGREE OF B. M. E.

FRESHMAN YEAR.

FIRST TERM.

	See Page		Hours per Week
English I	75	English Composition	3
Mathematics I	83	Trigonometry	5
Physics I	93	General Physics	2
Wood Working I	157	Theory of Wood Working	1
Drawing III	157	Mechanical Drawing	11
Shop Work IV	157	Bench and Lathe Work in Wood	11
Drawing VII	158	Free Hand Drawing	1
		Total	34

SECOND AND THIRD TERMS.

			2d Term	3d Term
English I	75	English Composition and Modern Drama	3	3
Mathematics II	83	College Algebra	5	5
Physics I	93	General Physics	3	3
Physics IV	93	Physical Measurements	2	2
Wood Working I	157	Theory of Pattern Making	1	..
Drawing III	157	Mechanical Drawing	3	3
Shop Work IV	157	Pattern Making	9	9
Shop Work V	157	Foundry Work	2	2
Descriptive Geometry VI.	157	Descriptive Geometry (Lectures and Drawing Room)	5	5
Drawing VII	158	Freehand Drawing	1	1
Foundry Practice II	157	Theory of Foundry Practice	..	1
		Total	34	34

SOPHOMORE YEAR.

First Term.

	See Page		Hours per Week
Mathematics III	83	Analytical Geometry	5
Physics VI	93	Advanced Physics	3
Physics VIII	93	Advanced Physical Measurements	2
Chemistry I	95	General Inorganic Chemistry	7
Drawing VIII	158	Elementary Design	7
Shop Work IX	158	Iron and Steel Forging	8
Shop Practice X	158	Lectures on Shop Practice	2
		Total	34

Second and Third Terms.

	See Page		2d Term	3d Term
Mathematics III	83	Analytical Geometry	5	5
Mathematics IV	83	Calculus	5	5
Physics VII	93	Electricity and Magnetism	3	3
Physics VIII	93	Advanced Physical Measurements	2	2
Chemistry I	95	General Inorganic Chemistry	7	7
Surveying I	141	Land Surveying	2	4
Drawing VIII	158	Elementary Design	2	2
Shop Work IX	158	Machine Shop Work	8	6
		Total	34	34

JUNIOR YEAR.

First Term.

	See Page		Hours per Week
Mathematics IV	83	Calculus	5
Electrical Engineering XI.	158	Elements of Electrical Engineering	5
Kinematics XII	159	Theory of Kinematics	5
Kinematic Design XIII	159	Kinematic Design (Drawing Room)	12
Mechanics of Materials XIV	159	Mechanics of Materials of Engineering	5
Testing of Materials XV	159	Testing of Materials—Laboratory	2
		Total	34

Second and Third Terms.

	See Page		2d Term	3d Term
Analytical Mechanics XVI	159	Analytical Mechanics	5	5
Machine Design XVII	159	Lectures on Machine Design	2	..
Machine Design XVIII	160	Machine Tool Design (Drawing Room)	12	6
Direct Current Machines XIX	160	Direct Current Dynamos and Storage Batteries	5	..
Electrical Design XX	160	Design of Electrical Apparatus (Drawing Room)	8	..
Chemistry XI	96	Gas Analysis	2	..
Applied Electricity XXI	160	Illumination, Telephony and Telegraphy	..	3
Electrical Design XXII	160	Direct Current Dynamo Design	..	9
Electrical Laboratory XXIII	160	Experimental Electrical Engineering	..	2
Steam Laboratory XXIV	161	Experimental Steam Engineering	..	2
Metallurgy XIV	172	Metallurgy of Iron and Steel	..	2
Graphical Statics	138	Graphical Statics	..	5
		Total	34	34

SENIOR YEAR.

First Term.

	See Page		Hours per Week
Thermodynamics XXVI..	161	Thermodynamics	3
Hydraulics V	138	Hydraulics	2
A. S. M. E. and A. I. E. E. XXVII	..	American Society of Mechanical Engineers and American Institute of Electrical Engineers	1
Alternating Currents XXVIII	161	Theory of Alternating Currents	4
Valve Gears XXIX	162	Valve Gears	3
Steam Boilers XXX	162	Steam Boilers	2
Valve and Boiler Design XXXI	162	Valve and Boiler Design (Drawing Room)	6
Steam Laboratory XXXII	162	Experimental Steam Engineering	2
Electrical Laboratory XXXIII	162	Experimental Electrical Engineering	2
Magazine Digest XXXIX	163	Discussion of Technical Magazine Articles	2
English Lectures XXXI...	77	Lectures on English Literature	1
Electrical Design XXXVIII	163	Direct Current Generator Design	4
Laboratory Reports	..	Preparing Laboratory Reports	2
		Total	34

Second and Third Terms.

	See Page		2d Term	3d Term
A. S. M. E. and A. I. E. E. XXVII	161	American Society of Mechanical Engineers and American Institute of Electrical Engineers	1	1
Steam Laboratory XXXII	162	Experimental Steam Engineering	2	..
Electrical Laboratory XXXIII	162	Experimental Electrical Engineering	2	..
Alternating Currents XXXIV	162	Alternating Current Machines, and Power Plants	5	..
Steam Engine and Pump Design XXXV	162	Steam Engine and Pump Design	4	..
Steam Turbines XXXVI.	163	Steam Turbines	3	..
Heating and Ventilating XXXVII	163	Heating and Ventilating	2	..
Electrical Design XXXVIII	163	Alternating Current Machine Design	4	..
Magazine Digest XXXIX	163	Discussion of Technical Magazine Articles	2	2
Heating and Ventilating Design XL	163	Heating and Ventilating Design	3	..
Steam Appliance Design XLI	163	Steam Appliance Design	3	..
Photography XLIII	164	Theory and Practice of Photography	2	..
English XXXI	77	Lectures on English Literature	1	1
Thesis XLIV	164	Preparation of Thesis for Graduation	..	28
Thesis Assembly XLV...	164	Discussion of Theses Problems	..	2
		Total	34	34

DESCRIPTION OF COURSE.

FRESHMAN YEAR.

Hours per Week	3d Term
3	
2	
	1
1	
4	
3	
2	
6	
2	
2	
2	
1	
4	
2	
34	
	1
	..
	..
	..
	..
	..
	..
	..
	2
	..
	..
	..
	1
	28
	2
34	

1. **Theory of Wood Working and Pattern Making. I.** This work includes: (a) Recitations on the forms of woodworking tools and the cutting and peculiarities of timber. (b) Lectures on the operation of the various forms of wood-working machinery. One hour per week, first and second terms. (DICKER)

2. **Theory of Foundry Practice. II.** This subject comprises lectures and recitations on the proper construction 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. One hour per week, third term. (DICKER)

3. **Mechanical and Free-Hand Drawing. III.** Comprising: (a) Free-hand sketches, drawing from copies and models, using parts of machines in the Mechanical Laboratories as models. (b) Free-hand lettering. (c) Exercises in tinting and shading. (d) Tracing. (e) Blue-printing. Eleven hours per week, first term, three hours per week, second and third terms. (NOLLAU)

4. **Shop Work in Wood. IV.** (a) 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. (b) Wood-turning, involving the various principles of lathe-work in wood. (c) Pattern-making, which gives the student experience in the construction of patterns for foundry work. Eleven hours per week, first term and nine hours per week, second and third terms. (DICKER)

5. **Foundry Work. V.** This shop practice includes the various operations of molding, core-making and the melting and casting of iron, brass and other commercial alloys. Two hours per week, second and third terms. (DICKER)

6. **English. I.** Department of English. Three hours per week, throughout the year.

7. **Mathematics II (College Algebra).** Department of Mathematics. Five hours per week, second and third terms.

8. **Mathematics I (Trigonometry).** Department of Mathematics. Five hours per week, first term.

9. **Physics I.** Department of Physics. Two hours per week, first term and three hours per week, second and third terms.

10. **Descriptive Geometry. VI.** 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 and two hours per week during the second and third

terms are devoted to descriptive geometry drawing. Five hours per week, second and third terms. (NOLLAU, CURTIS)

11. **Physics IV (Physical Laboratory).** Department of Physics. Two hours per week, second and third terms.

12. **Free-Hand Drawing. VII.** One hour per week, throughout the year. (MISS LOWRY)

SOPHOMORE YEAR.

1. **Mechanical Drawing. VIII.** (a) Drawing the parts of machines and complete machines to scale. (b) Design of machine details. Seven hours per week, first term, two hours per week, second and third terms. (NOLLAU)

2. **Blacksmith and Machine Shop Work. IX.** This course comprises: (a) Exercises in iron and steel forging. (b) Exercises in vise-work in metal. (c) General machine work; including screw cutting, drilling, planing and the milling of iron, brass and steel. Eight hours per week, first and second terms and six hours per week, third term. (DICKER)

3. **Lectures on Shop Practice. X.** A presentation of the essentials of efficient machine shop practice. Two hours per week, first term. (HORINE)

4. **Physics VII (Advanced Physics).**—Department of Physics. Three hours per week, first term.

5. **Physics VII (Magnetism and Electricity).**—Department of Physics. Three hours per week, second and third terms.

6. **Surveying I (Land Surveying).**—College of Civil Engineering. Two hours per week, second and third terms.

7. **Mathematics III (Analytical Geometry).**—Department of Mathematics. Five hours per week, throughout the year.

8. **Mathematics IV (Calculus).**—Department of Mathematics. Five hours per week, second and third terms.

9. **Surveying I (Field Work).**—College of Civil Engineering. Two hours per week, third term.

10. **Physics VIII (Physical Measurements).**—Department of Physics. Two hours per week, throughout the year.

11. **Chemistry I (General Inorganic).**—Department of Chemistry. Three hours per week, throughout the year.

12. **Chemistry I (Laboratory).**—Department of Chemistry. Four hours per week, throughout the year.

JUNIOR YEAR.

1. **Elements of Electrical Engineering. XI.** This work covers a study of the electrical and magnetic units, the fundamental laws of electrical

engineering, the construction and principle of the simpler forms of measuring instruments, such as galvanometers, ammeters, voltmeters, and wattmeters; the nature of condensers and the measurement of capacity; the nature of inductance and its measurement; direct current circuits and transmission lines and the fundamental theory of direct current generators and motors. Five hours per week, first term. (FREEMAN)

2. **Kinematics XII.** 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. Five hours per week, first term. (FRANKEL)

3. **Kinematic Design. XIII.** This course is given in conjunction with the theoretical work. 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 term. (FRANKEL, CURTIS)

4. **Mechanics of Materials. XIV.** 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 re-enforced concrete construction are given. Five hours per week, first term. (FRANKEL)

5. **Testing of Materials. XV.** 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, bricks in their various forms are made with a view of impressing the student with the factors entering into the use of such materials in engineering construction. Two hours per week, first and second terms. (FRANKEL, CURTIS)

6. **Analytical Mechanics. XVI.** 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 the student in the application of analytical mechanics in his engineering work. Five hours per week, second and third terms. (FRANKEL)

7. **Machine Design. XVII.** This course of lectures is given 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

stressed 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. Two hours per week, second term. (FRANKEL)

8. **Machine Design. XVIII (Drawing Room).**—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. Twelve hours per week, second term, 6 hours per week, third term. (FRANKEL, CURTIS)

9. **Direct Current Machines. XIX.** This is a continuation of the first term's work in Elements of Electrical Engineering and involves a further study of direct current generators and motors. During the latter part of the term, attention is given to the construction and uses of storage batteries. Five hours per week, second term. (FREEMAN)

10. **Electrical Design. XX.** The first part of this term is devoted to 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. Eight hours per week, second term. (FREEMAN, DUNCAN)

11. **Applied Electricity. XXI.** This work covers the applications of electricity, such as illumination, telephony and telegraphy. If time permits some attention is given to the rules of the National Board of Fire Underwriters, covering electrical installations. Three hours per week, third term. (FREEMAN)

12. **Direct Current Machine Design. XXII.** Each student is assigned a separate problem involving the design of a direct current generator or motor and follows the methods described by means of lectures or standard works on design. Nine hours per week, third term. (FREEMAN, DUNCAN)

13. **Electrical Laboratory. XXIII.** The electrical experiments are designed to parallel as far as possible the class work on direct current machines and applications of electricity, the plan being to give the student practical illustrations of the theoretical work 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. Two hours per week, third term. (FREEMAN, DUNCAN)

14. **Mathematics IV (Calculus).**—Department of Mathematics. Five hours per week, first term.

15. **Chemistry XI (Gas Analysis).**—Department of Chemistry. Two hours per week, second term.

16. **Graphic Statics**—College of Civil Engineering. Five hours per week, third term.

17. **Metallurgy XIV (Iron and Steel).**—College of Mines. Two hours per week, third term.

18. **Steam Laboratory. XXIV.** 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 per week, third term. (ANDERSON, WILHOIT)

19. **Engineering Inspection Trip. XXV.** Five days during the last week of the second term 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)

SENIOR YEAR.

1. **Thermodynamics. XXVI.** 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. Three hours per week, first term. (ANDERSON, HORINE)

2. **Hydraulics V.**—College of Civil Engineering. Two hours per week, first term. (CARREL)

3. **A. S. M. E. and A. I. E. E. XXVII.** Each student in the senior class 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. One hour per week, throughout the year.

4. **Alternating Currents. XXVIII.** This work involves a study of the fundamental principles of alternating currents and the principle and construction of alternating current generators and transformers. Four hours per week, first term. (FREEMAN)

5. **Valve Gears. XXIX.** The study of various forms of standard engine valves and methods of designing. Three hours per week, first term. (ANDERSON, HORINE)

6. **Steam Boilers. XXX.** 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. Two hours per week, first term. (ANDERSON, HORINE)

7. **Valve and Boiler Design. XXXI.** In valve design the essentials of steam distribution are presented by the solution of a number of problems involving first the kinematics valve motions and later the analysis of valve gears on some of the prominent engines on the American market. Finally valve gears are designed to produce a certain steam distribution. In boiler design the student is familiarized with the best steam boiler practice in horizontal and water tube designs. Six hours per week, first term. (ANDERSON, HORINE)

8. **Steam Laboratory. XXXII.** A series of experiments with steam apparatus and steam machinery, for the purpose of training men in the refinements of steam engineering. Two hours per week, first and second terms. (ANDERSON, WILHOIT)

9. **Electrical Laboratory. XXXIII.** 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 quantities 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. As in the case of the junior electrical laboratory work, a comprehensive report on each experiment is required of each student within a week after the experiment is performed. Two hours per week, during the first and second terms. (FREEMAN, DUNCAN)

10. **Alternating Current Machines and Power Plants. XXXIV.** This is a continuation of the first term's work in alternating currents and includes a study of alternating current motors, synchronous converters, and the equipment and operation of central stations for the generation of electrical energy. Modern high voltage transmission lines are given some attention. Five hours per week, second term. (FREEMAN)

11. **Steam Engine and Pump Design. XXXV.** A mathematical analysis of the stresses in steam machinery parts together with a consideration of effective engineering materials to be employed in the construction of steam and gas prime movers. Four hours per week, second term. (ANDERSON, HORINE)

12. **English XXXI (Lectures).** One hour per week, throughout the year. (KINKEAD)

13. **Steam Turbines. XXXVI.** A thermodynamic study of steam turbines with special reference to those extensively used in American power plants. Three hours per week, second term. (ANDERSON, HORINE)

14. **Heating and Ventilating. XXXVII.** 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, 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, second term. (FRANKEL)

15. **Electrical Design. XXXVIII.** The direct current generator and motor designs commenced in the junior year are completed. The remainder of the time is devoted to alternating current machinery and apparatus, such as transformers and induction motors. Four hours per week, first and second terms. (FREEMAN)

16. **Magazine Digest. XXXIX.** 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, HORINE, DUNCAN)

17. **Heating and Ventilating Design. XL.** This 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, one-half second term. (FRANKEL)

18. **Steam Appliance Design. XLI.** A drawing room analysis of steam appliances for the purpose of acquainting the student with the recent developments and current practice in steam machinery and steam specialties design. Six hours per week, one-half second term. (ANDERSON, HORINE)

19. **Inspection Trip. XLII.** This trip includes visit to the most important mechanical and electrical engineering industries in Chicago and vicinity. One week is devoted to the itinerary, and the following places are carefully studied from an engineering standpoint: Indiana Steel Company's plant, Gary, Indiana. Water intakes, Chicago Water Works, eight miles on Lake Michigan, Chicago Avenue and Central Park pumping stations, Fisk Street and Quarry Street generating stations of the Commonwealth Edison

Company, power plant of 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, and the Chicago Telephone Exchange. Examination week, second term. (ANDERSON, FREEMAN)

20. **Theory and Practice of Photography. XLIII.** 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 term. (NOLLAU)

21. **Thesis. XLIV.** Each student has the privilege of selecting his thesis subject from a list posted at the beginning of the second term, which includes designs and research work in the various fields of dynamic engineering. Much importance is attached to the comprehensive discussion of an engineering problem and the thesis presented is considered a measure of the skill and ability of the undergraduate in dynamic engineering. All of the third term except Wednesdays. (ANDERSON, FRANKEL, FREEMAN)

22. **Thesis Assembly. XLV.** The class is assembled for two hours 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)

COLLEGE OF MINES AND METALLURGY.

CHARLES J. NORWOOD, DEAN.

Organization.

The College of Mines and Metallurgy embraces the following schools:

A. School of Mining Engineering.
   (a) Mining Engineering.
   (b) Mining, two years' course.
   (c) Practical Miners' Course.
B. School of Metallurgical Engineering.
   (a) Metallurgy.
   (b) Ore Dressing.
C. School of Extension.

Advantages 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 within easy reach of Lexington. Practical work in concentrating lead ores may be studied at the Gratz and Kissinger mines, in near-by counties. At the Gratz mine the plant includes crushers, jigs, a Huntington mill and Woodbury concentrators. At the Kissinger mine the plant includes crushers, rolls, a Huntington mill, Woodbury concentrators and a smelter. The latter mine 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 Cambell plant is in operation. 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 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 Inspector 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. One of the rooms contains the mine rescue apparatus of the Inspector of Mines, and is fitted up for demonstrations in the use of such apparatus.

The second building (Mining Laboratory) is 40 feet by 80 feet and two stories high. It is devoted to laboratory work in Ore Dressing, Metallurgy, and Assaying. It also contains examples of mining machinery and the clay testing outfit of the State Geological Survey.

Equipment.

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 blue-prints, illustrating mining methods, mining machinery, and metallurgical operations; large Keuffel & Esser working models of verniers and slide rules; a working model of a shaft hoist with safety catches; examples of mining tools; two handsome cases showing various sorts of "DuPont" explosives; wire rope and electric wire boards; Koerting and Buffalo Forge Co. mine-spraying devices; safety lamps of various types (including electric); apparatus for instruction in methods of detecting mine gases and in testing safety lamps; apparatus for studying coal dust explosions; types of acetylene mine lamps; a very complete working model of a Cameron mine pump; four 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 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 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 Hardsocg hammer drill; a Nixon rachet coal drill; 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 last three were provided through the generosity of Mr. John B. Atkinson, President of the St. Bernard Mining Company, Earlington, Ky. The fan has been so installed that various problems relating to mine ventilation may readily be studied. Through the courtesy of the George D. Whitcomb Company, one of that company's latest type of coal-cutting machines has been deposited with the College, for use in demonstrating the application of compressed air in mining operations. The Carnegie Steel Co. has presented several sets of steel mine timbers, including lining; sufficient to fully illustrate an entry protected according to advanced methods.

Mine Rescue Apparatus.

Two of the six sets of life-saving apparatus for mines provided for the State Mine Inspectors, by means of a special appropriation made by the Legislature of 1910, have been placed in one of the basement rooms of the main building. The two sets include four Draeger oxygen helmets 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 of gas-poisoning. The room has been fitted up so that thorough 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.) is given upon the completion of the regular 4 years course which is outlined on page 168.

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 Civil Engineering, Mechanical Engineering, Electrical Engineering, Geology, Chemistry, Physics, Mathematics, Political Economy, Sociology, English, Spanish, and 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, English, Spanish and German.

A. SCHOOL OF MINING ENGINEERING.

A. MINING ENGINEERING.

OUTLINE OF COURSE FOR THE DEGREE OF B. E. M.

FRESHMAN YEAR.

First Term.

	See Page		Credits
English I	75	English Composition	1.2
Mining I	172	Elements of Mining	.8
Mathematics I	83	Trigonometry	2.0
Physics III	93	General Physics and Laboratory	1.6
Drawing III	157	Mechanical	3.2
Shop Work		Shop Work	2.4

Second and Third Terms.

English I	75	English Composition	1.8
Mining I	172	Elements of Mining	1.2
Mathematics II	83	Algebra	3.0
Physics III	93	General Physics and Laboratory	3.0
Drawing II	139	Descriptive Geometry	1.8
Drawing III	157	Mechanical	4.8

SOPHOMORE YEAR.

First Term.

	See Page		Credits
Mathematics III	83	Analytical Geometry	2.0
Physics VI	93	Advanced Physics	1.2
Mine Surveying	173	Mine Surveying	.8
Chemistry I	195	General Inorganic Chemistry and Laboratory	2.0
Design	..	Elementary Design	2.0
Geology VI	92	Economic Geology	.8

Second and Third Terms.

Mathematics III	83	Analytical Geometry	3.0
Physics VI	93	Advanced Physics	1.8
Mine Surveying	173	Mine Surveying	2.1
Metallurgy II	171	Elements of Metallurgy	.6
Mathematics IV	83	Calculus	3.0
Chemistry I	95	General Inorganic Chemistry and Laboratory	2.7
Chemistry II	95	Qualitative Analysis	.9
Shop Work	..	Forge Shop	.9
Geology VI	92	Economic Geology	.6
Electives	..	Approved Electives	....

JUNIOR YEAR.

First Term.

	See Page		Credits
Electrical Eng. XI	158	Elements of Electrical Engineering	2.0
Applied Mechanics and Hydraulics III	138	Advanced Strength of Materials	2.0
Mathematics IV	83	Calculus	2.0
Mining II and IIa	172	Excavating, Quarrying, Boring, Shaft-Sinking, Shaft-Boring	2.0
Metallurgy III	171	Metallurgy of Iron and Steel	1.2
Mine Surveying	173	Mine Surveying	1.2

Second and Third Terms.

Mining III	172	Development, Methods of Working	3.0
Applied Mechanics and Hydraulics IV	138	Analytical Mechanics	3.0
Metallurgy V and VI	171	Metallurgy of Silver, Gold, Copper, Lead and Other Metals	1.5
Chemistry VI	95	Quantitative Analysis	1.5
Geology III	91	Mineralogy	1.2
Ore Dressing I	174	Ore Dressing	1.5
Electricity	..	Dynamo—Electric Machinery	.9
Metallurgy I	170	Assaying	1.2

SENIOR YEAR.

FIRST TERM.

	See Page		Credits
Applied Mechanics and Hydraulics V	138	Hydraulics	.8
Steam Engine	..	Steam Engine	1.2
Political Science I	80	American Government	1.2
Political Economy I	80	Introduction to Economics	.8
Mining IV	173	Ore Deposits, Prospecting	.8
Mining V	173	Extraction, Ventilation	1.6
Ore Dressing II	174	Ore Dressing	2.4
English XXXI	77	Lectures	.4

SECOND AND THIRD TERMS.

Political Science I	80	American Government	.9
Political Economy I	80	Introduction to Economics	.6
Mining VI	173	Gases and Accidents (8 weeks)	....
Mining VII	173	Mine Plant	1.2
Metallurgy VII	171	Elements of Metallography	.9
Electricity	162	Alternating Currents, Power Plant	1.5
English XXXI	77	Lectures	.6
Physiology V	167	First Aid	.9
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DEPARTMENTS OF INSTRUCTION.

CHEMISTRY.

Chemistry is begun in the sophomore year. The course in general inorganic chemistry consists of lectures and recitations three times each week throughout the year, with laboratory exercises two times and three times each week in the first and second terms respectively. Qualitative analysis is given three times each week during the third term of the Sophomore year. Quantitative analysis is given three times each week during the second term 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, refactory materials, flue and producer gases, rocks, iron and steel; also, physical chemistry, including thermochemistry and electro-chemistry.

METALLURGY.

The study of Metallurgy is taken up by students in Mining and in Metallurgy in the Sophomore year. The work is apportioned as follows:

I. Assaying. The fire-assay of gold and silver ores, and of lead and copper ores for base metal. For students in Mining. Junior year, 4 times a week, third term. (CALLAWAY)

Ia. 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 rests for chloridized-roasting of silver ores. For students in Metallurgy. (NORWOOD, CALLAWAY)

II. Elements of Metallurgy. This includes a general review of typical metallurgical processes. For students in Mining and in Metallurgy. Sophomore year. 2 hours a week, third term. (CALLAWAY, or DISSINGER)

III. Metallurgy of Iron and Steel. For students in Mining, Junior year. 3 hours a week, first term. (NORWOOD)

IV. Metallurgy of Iron and Steel. Metallurgy III, extended. For students in Metallurgy. (NORWOOD AND ASSISTANT)

V. Metallurgy of Copper, Lead and Zinc. For students in Mining, Junior year. 5 hours a week, part of second term. (NORWOOD, DISSINGER)

VI. Metallurgy of Silver, Gold and Minor Metals. For students in Mining. 5 hours a week, part of second term. (DISSINGER)

VII. Elements of Metallography. An introduction to the subject for students in Mining. Senior year. 3 hours a week for 3 weeks, second term. (NORWOOD)

VIII. Metallurgy of Copper, Specialized. For students in Metallurgy. See Schedule. (NORWOOD, DISSINGER)

IX. Metallurgy of Lead, Specialized. For students in Metallurgy. See Schedule. (NORWOOD, DISSINGER)

X. Metallurgy of Silver, Gold, Zinc, and Minor Metals. For students in Metallurgy. See Schedule. (DISSINGER)

XI. Metallurgy of Alloys. Metallography. Metallurgy VII 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. See Schedule. (NORWOOD)

XII. Fuel Testing. Pyrometry. For students in Metallurgy.

XIII. Metallurgical Calculations. For students in Metallurgy. See Schedule. (NORWOOD AND ASSISTANT)

XIV. Metallurgy of Iron and Steel. For students in Mechanical Engineering. Junior year. 2 hours a week, third term. (NORWOOD)

XV. Metallurgy of Iron and Steel, preceded by a general review of metallurgical processes. For students in Civil engineering. Junior year. 3 hours a week, third term. (NORWOOD)

XVI. Metallurgy. A general account of Metallurgical processes, for students in industrial chemistry. Senior year. 2 hours a week, second and third terms.

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:

I. Elements of Mining. A general view of mining operations, preparatory for the more advanced work. Freshman year. 2 hours per week throughout the year. (CALLAWAY)

II. Excavating, Quarrying. (*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. Junior year. 5 hours per week for first part of first term. (EASTON)

IIa. Boring, Shaft-Sinking, Shaft-Boring. (*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. Junior year. 5 hours for last part of first term. (EASTON)

III. Development, Methods of Working. (*a*) Exploration and Development. Choice of exploratory methods—shaft, 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 filing. Methods of working ap-

plicable to deposits according to their origin, thickness, inclination, and character. Junior year. 5 hours per week, second and third terms. (EASTON)

IV. Ore Deposits, Prospecting and Metal Mining. (*a*) Geological Considerations. Origin of Ores. Classification of ore deposits. Irregularities and disturbances of beds and veins. (*b*) Prospecting: Systematic methods. Value of Geology. Tracing outcrops. Construction of sections. (*c*) Open cuts and stream workings. Hydraulic mining. Dredging. (*d*) Metal Mining. Senior year. First term, 5 hours a week. (NORWOOD, DISSINGER)

V. Extraction, Ventilation. Extraction and removal of material: Mine and surface haulage roads; rope and other means of haulage. Hoisting. Drainage. Ventilation: Theoretical considerations; methods of ventilation; distribution of air supply. Senior year. 4 hours a week, first term, (EASTON)

VI. Gases and Accidents. (*a*) Mine Gases and Illumination. (*b*) Accidents: Causes; places; explosions; safeguards; rescue and relief. Senior year. 3 hours a week, for 8 weeks, second term. (NORWOOD)

VII. Mine Plant. Machinery and appliances for mining, hoisting, draining, ventilating, hauling, screening, loading, storing, etc. Senior year. 4 hours a week, second term. (EASTON, BARR)

VIII. Examination and Valuation of Mines, etc. Methods and precautions in examination and valuation. "Salting," concealing exhausted workings, etc. Relation of capital invested to actual dividends. Mine management. Cost sheets. Senior year. 3 hours a week, third term. (NORWOOD, DISSINGER)

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 SURVEYING.

In Mine 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 under groundworkings; 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 companies with the State Inpsector of Mines are at the service of the student for study and comparison.

ORE DRESSING.

I. First Course. Junior year. 3 hours per week, third term.

II. Second Course. Senior year. 6 hours per week, first term.

Kentucky lead and zinc ores, complexes of fluorspar, calcspar, and barytes, and iron ores are readily available for the laboratory. In addition to the usual wet methods of concentration, magnetic, electro-static, and flotation processes of separation are studied. These courses will also include coal washing.

b. 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 Assistant 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.

Admission.

Applicants must not be less than 17 years of age, and unless more than 21 years of age must pass an examination in the common school courses in Arithmetic, English Grammar, Geography, and United States History, or they must present satisfactory certificates showing that they have successfully pursued those subjects elsewhere. Applicants over 21 years of age are admitted without examination.

Tuition.

County appointees receive tuition free; the charge for others is $20.00 per session.

SCHEDULE OF TWO YEARS COURSE IN MINING ENGINEERING.

FIRST YEAR.

Advanced Arithmetic.	Algebra.
Plane Geometry.	Solid Geometry.
Plane Trigonometry.	Elementary Physics.
Mining and Quarrying.	Physiography.

Free-hand and Mechanical Drawing.

SECOND YEAR.

English Literature.	Elements of Metallurgy.
Elementary Geology.	Elementary Chemistry.
Mining.	Assaying.
Surveying.	Map Drawing.
Mine Accounts.	Mine Plant Design.

c. 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 ten weeks, is necessarily given in the spring or summer. Details concerning the course are set forth in a special circular, which may be obtained upon application to the Registrar of the University. Persons desiring to take the examinations for mine foremen and for Assistant Inspectors of Mines will find the course quite helpful.

B. 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 included are: (a) Metallurgy, (b) Ore Dressing (ore separation and concentration), (c) Coal Washing, Coke Making, and Fuel Testing; and (d) Assaying.

Outline of Course.

The work in the Freshman year parallels that given in the course in Mining for the same year. Following are the subjects taken during the succeeding three years: Inorganic Chemistry, Qualitative Analysis, Quantitative

Analysis, Analytical Geometry, Advanced Physics, Surveying, Design, Geology, Calculus, Mineralogy, Strength of Materials, Elements of Electrical Engineering, Hydraulics, Dynamo-Electric Machinery, Alternating Currents, and Power Plants, Mining, Electro-Chemistry, Ore Dressing, Machinery English Literature (Eng. XXII), Civil Government, Political Economy, Metallurgical Plant Design, Assaying, and Metallurgy II, VIII, IX, X, XI, XII, and XIII. It is hoped that the program of studies may be so adjusted that a foreign language—French, German or Spanish—may be included. See the Schedule given on page 168.

A thesis and visits to metallurgical establishments to be designated each year, are required in the Senior year.

C. 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.

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 now assumes 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 in 1908, 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. A course of study covering a period of two years was prescribed, but the experience of one year proved that a longer period is necessary for a student to acquire a knowledge of the various elements of the law which will enable him to meet the needs of the profession. Commencing with September, 1909, the course was extended to three years, and embraces work of a collateral nature, which experience has proven to be of practical value in connection with technical instruction.

Formerly it was possible for the law student to begin and complete his professional studies in the office of a practicing lawyer. The demands upon the beginner were not so great; the authorities were few; the leading principles were settled and their application was comparatively simple. Now greater and better things are required. Our country is experiencing remarkable growth and development. 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 on 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 students who are residents of Kentucky, but each student will be required to make a deposit of $10.00, out of which $6.00 may be taken in payment of a card which will entitle the holder to the following privileges, free of charge for the year:

Admission to all the 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 admission to all athletic contests and exercises given under the auspices of the University Athletic Association. Whatever remains, less damage, will be returned to the student at the end of the year.

Non-resident students will each pay a tuition fee of $10.00 and an incidental fee of $5.00. Students entering after the Christmas holidays will each pay one-half of these fees. Each graduate will pay a diploma fee of $5.00. The books for the required work will cost about $25.00 per year. Good board can be had in private families at prices varying from $3.00 to $4.50 per week.

ADMISSION.

The entrance requirements to the Law College can be found on page 38 of this catalogue.

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 be 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 Departments 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. All law work is done in the afternoon, and the schedule is arranged so as not to interfere with other University work. No law student will be required to drill or do any kind of military duty.

Advanced Standing.

Applicants for admission to advanced standing must first satisfy the foregoing entrance requirements. By presentation of satisfactory certificates is-

sued 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 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 Dean that they are qualified to pursue the work with profit to themselves, and will be required to complete the subjects selected with the same thoroughness 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 before the beginning of the year in which he proposes to graduate.

DEGREES AND SPECIAL PRIVILEGES.

The Degree of LL. B.

The degree of Bachelor of Laws (LL. B.) will be conferred upon students who have satisfactorily completed the prescribed work of the course; at least one year must be residence work; he must have reached the age of twenty-one years; have satisfied the entrance requirements, and have performed all the required exercises and passed the regular examination.

The Degree of B. C. L.

The degree of B. C. L. (Bachelor of Civil Law) will be conferred upon such students as complete the full Law Course and in addition complete one full year of University work, including English Literature, special study of Constitutional and Political History of the United States and of England, Political Science and Government and Psychology.

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, or have been actively engaged in the practice of law for the period of five years, may become candidates for the degree of Master of Laws (LL. M.). For this degree, one years' resident work will be required.

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, which states the time of his attendance and the degree of his attainments in the subjects taken.

Removal of Conditions.

Students who fail to obtain their degree in due course, because of conditions (other than those for entrance), 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 and Law Course.

Seniors in the College of Arts and Science may elect as part of the requirements for graduation 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.

Collateral Study.

For the purpose of giving students every possible opportunity for thorough preparation, it is suggested to all those who have not had some training in a College or University, that it will be of great benefit to them to take in connection with their law work, some of the following courses offered in this University, which can be had without extra charge and so arranged as not to interfere with the law classes. Courses in English, courses in History, including Constitutional and Political History of the United States and of England, Political Science, Government, Psychology, Debating, and some others that may be selected.

This extra work is not required of law students, but is earnestly recommended.

Special Lectures.

Special lectures will be delivered during the year by eminent lawyers, covering many of the 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 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 collections of text-books, U. S. Supreme Court Reports, Federal and State Court Reports, duplicate sets of Kentucky Reports and Law Reporter, American Decisions, Amercian Reports, American State Reports, a complete set of the National Reporter System, including Century Digest, Decennial and National Digests, Lawyers' Reports Annotated, C. Y. C. Encyclopedia of Law, Encyclopedia of Pleading and Practice, and many other sets of valuable law books. Excepting the Court of Appeals Library in Frankfort, this is the best law library in the State.

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 Students' 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 set of Andrew's American Laws, consisting of two volumes and containing a compendium of American Laws.

LAW SOCIETY.

The Henry Clay Law Society is an organization composed of the law students, which convenes once each week in the Practice Court-room. 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.

METHOD OF INSTRUCTION.

The method of instruction pursued will be the use of text-books, lectures, illustrative 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.

Any student not attending more than ninety percent of the recitations on any subject, must in addition to the class examination, prepare an acceptable thesis upon that subject.

Moot and Practice Court.

A 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 each year of their 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 and apply the law, and how to present his case and debate it.

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. 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 to prepare and file in the court pleadings in all kinds of cases, both common law and equity, and as counsel they will carry through the various steps taken in a cause from its inception to the final order. Many cases will be given in which issue will be joined. In such cases students will be assigned to each side as Attorneys, and in taking the steps leading up to the issue, practice will be given in filing demurrers and all other incidental proceedings. All steps necessary to be taken in criminal cases, from the making of affidavit preparatory to arrest up to and including the return of the indictment, will be taught in this court.

Actual controversies will be arranged and assigned for trial on issues of fact before a jury, when witnesses will be examined, arguments made before the court and jury, and all other incidents of a contested trial will be experienced.

Contested Equity Cases will be made up on given statement of facts, students alternating in service will be assigned as attorneys on either sides of the case, 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, and brief the cases before the special judges, who will write opinions on same, which opinions together with the briefs in each case will be kept in the Department files.

A regular court docket will be kept, on which the style of the cases and the names of Attorneys are recorded. All steps taken in the cases will be recorded in a record book kept for that purpose. At the conclusion of a case the pleadings and other documents used will be retained in the files. Appeals will be prosecuted to the Court of Appeals, and each student will be instructed in the preparation of the case and in the procedure before that court.

Students will at intervals attend the courts of Fayette County which are in continuous session. Experience gained there 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 practitioner, will have this opportunity offered them.

COURSE OF INSTRUCTION.

FRESHMAN YEAR.

I. Study of the Common Law. Blackstone's *Commentaries*: Introduction, Book I (omitting chapters III to IV); Book II (complete). Three hours a week for sixteen weeks. (LAFFERTY)

II. Domestic Relation. 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;* Lectures. Three hours a week for sixteen weeks. (TOWNSEND)

III. Torts. This course deals with all phases of the subject. Text-book: Bigelow on *Torts;* Cases. Two hours a week for twenty weeks. (KERR)

IV. Contracts. Elements and principles, formation, classification, the various relations and laws governing same. Tests in the formation of contracts. Text-book: Clark on *Contracts;* Lectures and Cases. Two hours a week for thirty-five weeks. (VAUGHN)

V. Real Property. This subject is treated fully, including instruction in conveyancing, abstracting, and the keeping of real estate court records. Text-book: Minor and Warts on *Real Property;* Lectures and Cases. Two hours a week for thirty-five weeks. (CHALKLEY)

VI. Agency. The creation, dissolution, and incidents. Text-book: Mechem's *Outline of Agency;* Study of cases. Two hours a week for eight weeks. (NICHOLS)

VII. Partnership. Formation, dissolution, liabilities, and consequences. Text-book: Mechem's *Elements of the Law of Partnership;* Study of Cases. Two hours a week for eight weeks. (NICHOLS)

VIII. Principles of Sales. Text-book: Benjamin's *Principles of Sales;* Study of Cases. Two hours a week for eight weeks. (NICHOLS)

IX. Criminal Law. The general principles of Criminal Law, the elements and classification of crimes, proceedings in criminal cases. Text-book: Clarks' *Criminal Law;* Selected and Moot Cases. Three hours a week for twenty-two weeks. (LAFFERTY)

X. Bills, Notes and Checks. This course deals with the law and business application of the subject. Text-book: Bigelow on *Bills, Notes and Checks;* Lectures. Two hours a week for fifteen weeks. (KERR)

Forensics. (English VII.) Instruction by Prof. Farquhar, of the Department of English in the College of Arts. Two hours a week for thirty-five weeks. (FARQUHAR)

JUNIOR YEAR.

XI. 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;* Cases. Two hours a week for eighteen weeks. (CHALKLEY)

XII. 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 a week for thirty-five weeks. (BUSH)

Va. Real Property. Continued from first year, including conveyancing and other transactions relating to real property. Study of cases. Two hours a week for eighteen weeks. (CHALKLEY)

XIII. Evidence. This course covers the rules of evidence as developed by the common law, and the rules now 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. I, fifteenth edition; Select Cases. Two hours a week for twenty-four weeks. (CHALKLEY)

XIV. 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;* Lectures and Cases. Two hours a week for twelve weeks. (CHALKLEY)

XV. Bailments and Carriers. Origin and history; the various kinds of persons and companies classified under this head and the laws regulating same. Text-book: Schouler on *Bailment and Carriers;* Cases. Two hours a week for fifteen weeks. (CHALKLEY)

XVI. 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, Students' Edition;* Study of Cases. Two hours a week for thirty-five weeks. (ALLEN)

XVII. 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 pleading, demurrers, etc. Text-book: Bryant's *Code Pleading;* Test and selected Cases. Two hours a week for eighteen weeks. (CHALKLEY)

XVIII. Wills and Administration. Persons who may 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 a week for twelve weeks. (LAFFERTY)

XIX. 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 effect. Two hours a week for twenty weeks. (CHALKLEY)

XX. Moot Court and Practice Work. This work will embrace the study of law and its applications to given statements of facts, brief making, and the study and practice of uncontested matters such as the lawyer handles in his office. Two hours a week for twenty weeks. (LAFFERTY)

XXI. Medical Jurisprudence. A course of lectures will be delivered on this subject.

Sociology I. This subject is taught in the Arts Department of the University, but it is required of law students. Text-book and collateral reading. Two hours a week for fifteen weeks. (TUTHILL)

SENIOR YEAR.

XXII. 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;* Selected Cases. Two hours a week for twelve weeks. (CHALKLEY)

XXIII. 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;* Selected and Test Cases. Two hours a week for twenty-four weeks. (LAFFERTY)

XXIV. 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: Cooley's *Principles of Constitutional Law.* Two hours a week for eighteen weeks. (CHALKLEY)

XXV. 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 the Civil Law.* Two hours a week for twenty-four weeks. (TIGERT)

XXVI. Quasi Contracts. Obligations based upon contractual relations, and imposed upon equitable rules. Text-book: Keener on the *Law of Quasi Contracts;* Lectures and Cases. Two hours a week for sixteen weeks. (CHALKLEY)

Political Economy I. This subject is taught in the Arts Department

of the University, but is required of law students. Text-book and collateral reading. Two hours a week for thirty-five weeks. (TUTHILL)

XVII. International Law. Course of lectures. (PRESIDENT BARKER)

XXVIII. 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. (PRESIDENT BARKER)

XXIX. Bankruptcy. Law and procedure. Two hours a week for eight weeks. (LAFFERTY)

XXX. Civil and Criminal Procedure. Practice court work, code and statute law, including all lines of work elsewhere set out under title, "moot and practice court." Three hours a week for thirty-five weeks. (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 10, 1913, and continuing eight weeks. These courses will be given on 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 preiod 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 $2.00 to $3.00 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 line 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 wherever 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 $10.00 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 will do 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, and (c) by one or more specialists in the older institutions of learning.

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.

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 successfully 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 university, 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 two months before the date when 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 will 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 be conferred for faithful work merely, but for original and worthy investigation.

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 languages 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 the university libraries.

DEPARTMENTS OF INSTRUCTION.

CHEMISTRY.

Professors Tuttle and Maxon.

EDUCATION.

Professor Noe.

For courses in this Department open to undergraduates and graduates, see, in the preceding portion of the catalogue, Courses VIII, XII, XIII and XV (v. page 101).

XVI. Seminary in Educational Problems. Investigation 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. For graduates only. (NOE)

XVII. Seminary in Administration and Supervision. Special topic for 1913-1914 *Rural Education.* 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. (BOHANNAN)

ENGLISH AND COMPARATIVE LITERATURE.

Dean Mackenzie.

The following courses are for graduate students exclusively.

ENGLISH LANGUAGE.

I-g. English Philology. Keltic and Norse elements in our language and their influence on syntax, orthography, etc.

II-g. English Philology. Hebraic and Hellenistic traces in English syntax; loan-word fallacies; the rise of Scots, etc.

III-g. Comparative Philology. Elements of Gothic, Sanskrit or Hebrew compared with some modern languages.

IV-g. Textual Criticism. Dialects, etc.

V-g. Special Study. Instructors are ready to assist and advise competent students who may suggest plans of special study which receive the sanction of the Department.

ENGLISH LITERATURE.

VI-g. Literary Problems. Details will be arranged by consultation.

COMPARATIVE LITERATURE.

VII-g. Methodology.

VIII-g. Bibliography of a Type.

IX-g. Origin of Poetry.

X-g. Magic Songs and Hymnography.

XI-g. Special Study. Literary work, satisfactory to both student and instructor, may be determined by consultation with the Head of the Department.

GEOLOGY.

Dean Miller.

Professor A. M. Miller will gladly answer inquiries from prospective graduate students in Geology. Work may be arranged after consultation.

LATIN.

Professor Jones.

XI. 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.

GREEK.

**Professor Terrill.*

VIII. 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 on 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 great 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 I, III, and IV, or their equivalents. They should also present one college course in the history of the United States, or a course

*Absent on leave during 1912-1913.

which treats of American Government, such as Political Science I. In addition, one or more foreign languages will be expected, according to the character of the courses attempted. The Department will encourage students from other institutions of learning to defer application for the higher degrees until the end of the first term. The following courses are available:

VII. Pro-Seminar in European History. This consists of the reading, translation and study of a selected chronicle. Open to graduates only. Two hours for a half year.

VIII. 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, Spring term.

POLITICAL ECONOMY.

Political Economy may be taken as a minor only. The following courses are offered:

III. Pools and Trusts. A study of agricultural and commercial agreements and court decisions thereon. Open to undergraduates who have completed courses I and II, and to graduates. 2 hours per week, Fall Term.

IV. Statistics. A study of averages, weighting, criticism, and practical exercises. 2 hours per week, Winter and Spring terms.

Political Science.

III. Comparative Constitutional Law. A comparative study of the governments of the greater nations of America and Europe. Prerequisite, Political Science I. 2 hours per week, throughout the year.

MATHEMATICS.

Professor Boyd, Professor Davis.

The following courses are scheduled for candidates for an advanced degree. Some however, are more distinctly graduate courses than others and so may be given different weight in counting toward a degree. It should be added that the course is flexible and subject to change, if at the opening of the year good reason arises.

VI. Higher Algebra. This course embraces Theory of Equations, Determinants and Vector Analysis and is given chiefly by lectures based on Burnside & Panton's Theory of Equations, Hanus's Determinants, Gibbs-Wilson's Vector Analysis. Not given in 1912-'13. 3 hours per week, throughout the year. (Rees)

VII. Calculus and Differential Equations. An advanced course in calculus during the Fall term based on selected chapters in Granville's & Byerly's texts. During the Winter and Spring terms an introductory course in Differential Equations is given. 2 hours per week, throughout the year. (DAVIS)

VIII. Teachers' Course. 2 hours per week, throughout the year. (DAVIS)

IX. Advanced Analytics. A thorough course intended to furnish the student with the extended theory connected with Conic Sections and especially with the use of abridged notations. It is an introduction to the theory of algebraic curves. Given in 1912-'13. 3 hours per week, throughout the year. (BOYD)

X. Projective Geometry. This course provides a study of the content and methods of reasoning of modern synthetic geometry. The work will follow the texts of Reye and Cremona. Given 1912-'13. 3 hours per week, throughout the year. (BOYD)

XI. Theory of Algebraic Curves. This course will be based upon the works of Salmon and Wieleitner and will require a reading knowledge of French and German. 3 hours per week, throughout the year. (BOYD)

XII. Theory of Functions of a Complex Variable. Any introductory course to be given by lectures. 3 hours per week, throughout the year. (BOYD)

XIII. Potential Functions and Fourier's Series. This course is offered for the benefit of engineering students and those majoring in Physics. The texts of Pierce and Byerly will be used. 3 hours per week, throughout the year. (BOYD)

XIV. Mathematics Club. The club meets once a week. Some book is adopted for study each year and the members of the club take their turns in leading the discussion of assigned parts. In addition, numerous talks on special topics of interest are presented.

MODERN LANGUAGES.

Professor Zembrod.

FRENCH.

IV. 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 II and III. Two hours per week, throughout the year. Tues. 4th hour, Fri. at the 3d hour.

GERMAN.

VII. 19th Century Novel and Drama. This course will be offered to a class of not less than six students. Prerequisite courses, German V and VI. Two hours throughout the year. Mon. and Wed. at the 3d hour.

PHILOSOPHY.

Professor Tigert.

IV. 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*. 2 hours per week, throughout the year.

V. 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 *Introductory to Philosophy*. 3 hours per week, Fall and Winter terms.

VI. 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 VI. 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*. 3 hours per week, Spring term.

PHYSICS.

Professor Pence.

Professor Pence will receive students wishing graduate work in Physics, provided they have the necessary preliminary training.

AGRICULTURE.

Dean Kastle, Professors Matthews, Garman, Hooper, Peter, LaBach, Good, Roberts, Healy, Surface.

In the College 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 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.

The Experiment Station is the Research Department of the College of Agriculture. As such it offers splendid 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 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, subject to the approval of the Faculty of the College of Agriculture. Two or more minor subjects will be assigned by the faculty. At least one year's resident work at the University will be required of candidates for the degree of Master of Science in Agriculture, and 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.

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 Sciences.

MECHANICAL AND ELECTRICAL ENGINEERING.

Dean Anderson, Professors Frankel and Freeman.

The College of Mechanical and Electrical Engineering is prepared to offer post-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.

Degrees.

The advanced degree, M. E. (Mechanical Engineer), or E. E. (Electrical Engineer), may be obtained by a resident student in 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 faculty that post-graduate work is being done and the work must be approved by the Faculty.

MINING AND METALLURGY.

Dean Norwood, Professor Easton.

Advanced Degrees.

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 Civil Engineering, Mechanical Engineering, Electrical Engineering, Geology, Chemistry, Physics, Mathematics, Political Economy, English, Spanish and 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, English, Spanish and Ger, man.

GENERAL UNIVERSITY DEPARTMENTS.

DEPARTMENT OF PHYSICAL EDUCATION.

JOHN J. TIGERT, HEAD OF DEPARTMENT.
J. W. PRYOR, M. D., MEDICAL DIRECTOR.

I.—FOR YOUNG MEN.

H. H. DOWNING, DIRECTOR.

"Orandum est ut sit mens sana in corpore sano."—Juvenal.

Special Statement.

Plato is said to have called any one lame who exercised the mind while the body was allowed to suffer. In these days when so much time is spent in training the mind, when specialization in almost all lines has developed to such a degree that man has practically lost his all-round activity, when labor-saving machines are saving his muscles but not his nerves, when competition is so close and the motto "Press Onward" is ever before him, when the rush of our population from the healthful influences of country life to vitiating influences of the cities is increasing—in short, when nearly all the conditions and activities that have served to make our ancestors healthy and the great legacy of health which was inherited by our fathers and, in a measure, by us, are being gradually withdrawn from us, it urgently behooves all of us to pay more attention to our physical welfare.

This is especially the case with college students. In college the student is urged toward mentality. It is the purpose of the Department of Physical Education to see not only that our students do not deteriorate in health and general physical stamina, but that they actually improve, while pursuing their studies here. Many of them come from rural communities. These are usually strong and vigorous. For this they are indebted to pure air, good food, sunshine, and healthful exercise. It were exceedingly inadvisable to withdraw these conditions from them. They can not thrive in changed conditions as well as the city boys who are more of less accustomed to the opposite environment. But there is even a greater need of this work for the city boys who are pale, flat-chested, and poorly developed.

Montaigne said: "It is not a soul, it is not a body, that we are training, but a *man*, and we must not divide him." Educators are taking hold of this idea, that real education must be broad enough to include the entire man. This Department is supported by the Board of Trustees and the Faculty of the institution the same as any other department. It includes nearly all of the students. It is for the masses. The work is required for graduation. During the past year about eighty percent of all the students enrolled were present at every lesson.

Physical Examination.

Upon entrance every student is subjected to a medical examination of the heart and lungs by the Medical Advisor. If found ineligible to enter the work of the Department, theoretical work is assigned. If eligible, the Director of the Department will make an anthropometric examination consisting of the important physical measurements, strength tests, capacity of lungs, etc. He will also note the condition of the skin and examine for the usual physical deformities. Tests will be made of the vision, the hearing, and the color sense, and information concerning the family history of the student will be secured.

Aims.

The work of the department will be conducted with six purposes in view, (*a*) the promotion and maintenance of health, (*b*) the development of the muscles for strength, grace, and good carriage, (*c*) the prevention and correction of physical deformities, such as flat foot, round shoulders, flat chest, spinal curvature, etc., (*d*) the overcoming of hereditary tendencies to disease, (*e*) the development of the faculties of attention, judgment, precision, discrimination, etc., and (*f*) the cultivation of the highest ethical ideals.

Two or more hours per week are required during the entire collegiate year, theoretical instruction being the more prominent during the warm weather of the Fall and Spring.

Physical Introspection.

Another feature of the work is that of physical introspection. Under this head is included (*a*) the effort to enlist the interest of the student in his physical welfare and to teach him the value of physical education, (*b*) frequent talks on applied physiology as well as on personal and public hygiene, (*c*) lectures on the several aspects of physical education, including (1) its history—status amoung the Greeks and growth of the present time, (2) its relation to sociology, psychology, and morality, (3) its relation to bacteriology and hygiene, (4) first aid to the injured.

Text-Book Instruction.

A feature of the coming year will be text-book instruction in the care of the body—value of air, sunshine, bathing, exercise, hygiene, etc. Selections will be made from the following books: Gulick's *The Efficient Life*, Gulick's *Physical Education by Muscular Exercise*, Blaikie's *How to Get Strong and Stay So*, Buckley's *Studies in Physical Culture*, Mosso's *Psychic Processes and Muscular Exercise*, Chesterton's *Theory of Physical Education*, Schofield's *The Maintenance of Health*, Dulles' or Butler's *Emergencies*. Other books and magazine articles will be assigned for parallel reading, and essays on various subjects relating to health will be required.

Floor Work.

Swedish gymnastics will form the foundation of the practical floor work, but this will be frequently interspersed with German gymnastics and musical accompaniment. Arrangements are usually made with the Military Department whereby the entire cadet corps is instructed in the Physical drill and "setting up" exercises by the Director of this Department at stated intervals during the winter term. Swedish exercises will also form a part of this instruction.

For recreation basket-ball and other gymnastic games will be employed. Opportunities for instruction in such personal contests as boxing, fencing, single sticks, wrestling, etc., are provided, and the work will be conducted by special instructors. As much of the work of the Department as possible will be conducted out-of-doors.

The attention of all patrons of the University is respectfully called to this Department and their hearty support is earnestly requested.

II.—FOR YOUNG WOMEN.

MRS. ROBERT LEE STOUT, DIRECTOR.

Departmental 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 2 years, and as part of the curriculum is graded as other studies, pupils must have an examination of heart and lungs by the University physician, Dr. Pryor, and an anthropometric examination by the Director before entering for work.

Swimming.

The swimming school for women is the only one of the kind in the South, and it was organized five years ago. It opens after the Annual Gymnastic Tournament in April, and is remarkably popular.

Basket Ball.

Social games like basket-ball have a definite purpose in Physical Education. Players require quickness of thought, judgment, and self-control under excitement. They learn to sacrifice self for the sake of the team as a whole. Gymnastic training has given our young women such suppleness and endurance that their fame is more than local.

DEPARTMENT OF MILITARY SCIENCE.

LIEUT. GULLION.

The military instruction is under the charge of an officer on the active list of the United States Army. The course as a whole has special reference to the duties of the line. A full supply of arms and ammunition is furnished by the War Department for the use of the students in this course.

Requirements.

Every male student is required to drill or attend lectures, three times each week throughout the Freshman and Sophomore years. The standings in military work are placed on record and are 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, the organized Militia, 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 attachment.

Organization.

The battalion is composed of four companies, the band and the signal detachment. The officers are usually selected from the Junior class and the non-commissioned officers from the Sophomore class. The officers are paid a small sum for their services.

The Uniform.

The uniform prescribed is of olive drab, cut after the army pattern. In order that all uniforms worn here may be, in quality, make and finish, in strict accordance with the specifications adopted by the University, all students enrolled in the military department are required to obtain them only from the firm that may have the contract. High-cut tan shoes with laces are a part of the uniform, though not supplied by the contractor. Each student is required to provide himself with such shoes and to wear them whenever in uniform.

Plan of Instruction.

1. Theoretical Instruction—

a. For officers and non-commissioned officers: Infantry Drill Regulations, Firing Regulations, Manual of Guard Duty, Field Service Regulations.

b. For all students: Lectures on the organization and the administration of the United States Army, and the general principles of minor tactics.

2. Practical Instruction for all.

Infantry: Infantry will drill up to and include the school of the battalion. Ceremonies.

Signal detachment: Visual signaling with flags.

OFFICERS OF THE CORPS OF CADETS, 1912-1913.

FIRST LIEUTENANT ALLEN W. GULLION, 20th U. S. Infantry,
Commandant.

STAFF.

D. D. Felix, *Major.*
P. D. Brown, *Captain and Adjutant.*
D. M. Gaither, *Captain and Quartermaster.*
H. Scott, *Sergeant Major.*
Clyde Taylor, *Quartermaster Sergeant.*
L. B. Evans, *Color Sergeant.*
T. F. Haynes, *Color Sergeant.*

BAND.

H. G. Lovelace, First Lieutenant, *Chief Musician.*
H. H. Wesley, *Drum Major.*

SIGNAL DETACHMENT.

E. H. Nollau, *Sergeant.*
R. G. McArthur, *Corporal.*
R. G. Pulliam, *Corporal.*

COMPANY A.

G. W. Gayle, *Captain.*

C. Schwartz, *First Lieutenant.*
E. N. Walter, *First Sergeant.*
E. McGuffey, *Sergeant.*
C. S. Rollings, *Sergeant.*
H. F. Otto, *Sergeant.*
R. D. Puckett, *Sergeant.*
S. W. Duke, *Corporal.*
A. C. Griffey, *Corporal.*
H. P. Parrigan, *Corporal.*
J. W. Whitnell, *Corporal.*
F. Williams, *Corporal.*
J. W. Worthington, *Corporal.*

COMPANY B.

H. K. Gayle, *Captain.*
O. P. Gerhard, *First Lieutenant.*
L. O. Coleman, *Second Lieutenant.*
P. R. Sallee, *First Sergeant.*
A. Blackburn, *Sergeant.*
J. T. Gelder, *Sergeant.*
H. E. Barth, *Sergeant.*
E. W. Newland, *Sergeant.*
R. E. Utterback, *Sergeant.*
I. L. Arnold, *Corporal.*
R. H. Gilbert, *Corporal.*
W. K. Clore, *Corporal.*
A. H. Johnson, *Corporal.*
J. A. Middleton, *Corporal.*
J. L. Owen, *Corporal.*
C. J. Petrie, *Corporal.*

COMPANY C.

H. N. Marsh, *Captain.*
J. W. McDonald, *First Lieutenant.*
W. H. Noel, *Second Lieutenant.*
H. H. Meade, *First Sergeant.*
R. L. Ehrlich, *Sergeant.*
S. J. Caudill, *Sergeant.*
S. E. Cook, *Sergeant.*
R. R. Morgan, *Sergeant.*
R. W. Tiernan, *Sergeant.*
H. Y. Barker, *Corporal.*
J. E. Byers, *Corporal.*
H. D. Graham, *Corporal.*
T. R. Nunan, *Corporal.*
J. W. Mitchell, *Corporal.*
C. S. Rainey, *Corporal.*
G. C. Rogers, *Corporal.*
R. R. Yoe, *Corporal.*
F. S. Wash, *Corporal.*

COMPANY D.

J. W. Kunzman, *Captain.*
J. W. Vest, *First Lieutenant.*
O. W. Crowder, *Second Lieutenant.*
R. L. Bierbaum, *First Sergeant.*
G. Ireland, *Sergeant.*
A. J. Kraemer, *Sergeant.*
C. H. Melear, *Sergeant.*
J. E. Powers, *Sergeant.*
J. E. Bolling, *Corporal.*
M. Brook, *Corporal.*
C. C. Griggs, *Corporal.*
K. Doris, *Corporal.*
A. X. Peffer, *Corporal.*
W. Rhoades, *Corporal.*
E. D. Snodgrass, *Corporal.*

THE SUMMER SCHOOL.

J. T. C. Noe, Director.

GENERAL INFORMATION.

State University of Kentucky has planned a Summer School for teachers this year that will meet the requirements of any teacher in Kentucky who desires to pursue work of a professional nature or to further his academic education. The College of Arts offers thorough and complete courses in all the departments, and other schools have prepared courses that will be of special interest to teachers. The College of Agriculture for example, has offered courses in Pedagogy of Agriculture and Home Economics. The College of Mechanical and Electrical Engineering will be open to teachers who desire to study freehand or mechanical drawing and shop work.

We have received many calls for superintendents, principals and high school teachers during the past year which we could not fill because we have not a sufficient number of well qualified teachers on our roster for these positions. Come to the Summer School this summer and fit yourself for a higher and more lucrative position. The high schools in Kentucky should develop rapidly, and there is a strong and growing demand for college bred professionally trained teachers. Let the University help you to a better place and perform its true function in the development of secondary schools in our state.

Length of Term.

The summer term will begin June 10th and continue until August 1st.

Admission.

There are no formal requirements for admission to the Summer Session and its courses are open to all students qualified to pursue them to advantage. If college credit toward a degree is desired, the student must first meet the usual entrance requirements.

Courses.

In most of the departments courses are offered which are equivalent to those given during the regular terms of the University. Many students of

this and other universities and colleges can take advantage of these courses so as to shorten materially the time necessary for graduation.

Special and Technical Courses.

In addition to the regular work, there are many courses which are of interest to the instructors in colleges and high schools, superintendents and principals, teachers, engineers and lawyers. A number of courses for college entrance are also offered for students whose preparation for the University work is slightly deficient.

Credit Certificates.

Students will, upon request, receive certificates of proficiency for all work satisfactorily performed.

Registration.

Students upon arrival at the University will report at the Registrar's office and be enrolled.

Fees.

Teachers in Kentucky schools, principals, and superintendents and those who are expecting to teach during the next school year will be charged a tuition fee of $6.25 for the session of eight weeks. A certificate showing that this fee has been paid will admit the student to any courses which he may desire to take in the University. No student will be allowed, however, to take more work than he can satisfactorily complete within the eight weeks. Other students in the College of Arts will be charged a fee of $12.50 for the session.

Board and Lodging.

Patterson Hall, one of the handsomest and best appointed ladies' dormitories in the South, will be open to young women for the summer term. Furnished rooms, lights, bath and meals cost $3.00 per week. Students must furnish their own bed linen and towels.

Room rent in men's dormitories will be free for the summer. Applicants should send requests early as only a limited number of students can be accommodated in the dormitories. Meals can be had in the vicinity of the University at prices ranging from $2.00 to $3.50 per week.

Library.

The Carnegie Library, located upon the campus, will be open during the summer term for the use of students. An excellent opportunity will be given

for the enjoyment of all library privileges. Students will also have access to the large City Library, which is in easy reach of the University.

Astronomical Observation.

A small observatory is located upon the campus and may be used by the students under the direction of the professor in charge of observation work.

Museum.

The State Museum has been placed in charge of the University for instructional purposes and contains extensive collections in Natural History, Mineralogy, etc.

Excursions.

A number of excursions will be given during the term for the benefit of the students to enable them to see the points of interest in this section of the State.

Summer Employment.

Students who apply early will be enabled to secure employment during the summer that will enable them to pay a large part of their expenses.

Special Attraction.

Lexington, the "Belle of the Bluegrass," the seat of the University, is located with ample railroad facilities and is accessible from all directions. It is surrounded by beautiful country and the most attractive and largest stock farms in the world.

The University campus contains 52 acres, occupying the highest point around Lexington. It is covered by beautiful shade trees and attractive shrubbery, and has upon it 14 large buildings. It is, in fact, an ideal place to spend the summer in study.

Special Lectures.

A number of men of national reputation have been employed to deliver lectures on subjects of professional interest to teachers. Dr. O'Shea of the University of Wisconsin will be with us again. We are expecting also, other men of equal note, whose names we are not able to announce at this time. Prepare now to spend your summer in Lexington and fit yourself for a higher class of work during the coming year.

For further information address,

J. T. C. NOE,
Director of the Summer School.

COLLEGE OF ARTS AND SCIENCE.

ARTHUR MCQUISTON MILLER, DEAN.

ENGLISH.

Associate Professors Farquhar and Dantzler.

I. English Composition. The course is designed for teachers who wish to take advanced work in the four forms of composition. There will be the specific collateral reading and practice in theme writing with required modes of development.

II. American Literature. A historical and extensive study.

III. Short Story. Includes the rise and development of the short story and a study of the American short story from Bret Harte to date.

IV. The Novel. Includes a study of the rise and growth of the realistic and romantic types.

V. Poetry. Two or three poets selected by the class will be studied from various angles. Includes a study of poetics.

VI. Literary Study of the Bible. Regarded as indispensable to a discriminating appreciation of literature.

VII. Drama. The class may select dramas of the Pre-Shakesperean Elizabethan Restoration or Modern types for exhaustive study. The course includes a historical review and general survey of drama.

GENERAL INORGANIC CHEMISTRY FOR TEACHERS.

Dr. Tuttle.

A course of lectures covering, as far as time permits, the material generally offered in the introductory course in chemistry; especial emphasis to be placed on points of interest in everyday life.

The emphasis to be laid on descriptive chemistry in contrast to theory, and the lack of time for laboratory exercises, will make it impossible for this time to be taken as equivalent for any part of the Chemistry I of the regular term.

HISTORY AND ECONOMICS.

Dr. Tuthill.

The Department will be glad to answer inquiries relating to any of the following courses.

I. History Ia. Ancient History. Beginning with an account of Prehistoric man in Europe and America, this course will survey the outlines of development in Egypt, Babylonia, India, Persia, China, Palestine, and Lydia. West's Ancient World, Seignobos' Ancient Civilization, and Lectures. Credit for the first half of History I.

II. High School History, for Teachers. This is an attempt to learn definitely the needs of Kentucky history teachers, and to suggest some of the newer devices for enlisting interest. Reviews of periodicals and new books. Monday at 4. Credit only by arrangement with the instructor.

III. Sociology Ia. A brief study of practical charities, with excursions to various institutions in Fayette county. Designed to acquaint the teacher with modern methods in the care of dependent classes. Text, Warner. Reference work in the library. Credit according to work done.

IV. State and Local Government. The attempt will be made to survey the essential features of our commonwealth and municipal government, using the Constitution of Kentucky for reference purposes. Attention may also be given to the teaching of government in schools. Credit as in the second half of American Government I.

LATIN AND GREEK.

Professor Jones.

I. Latin. A thorough drill in First Year Latin declension, conjugation, uses of the subjunctive, conditional sentences.

II. Latin. Easy fables, and selections from Caesar, especially those which deal with the customs of the Britons, Germans and Gauls.

III. Latin. Cicero—Selected letters and Orations. This course is intended to give teachers a wide and more intimate acquaintance with Cicero. Such speeches as its Fourteenth Philipic will be read, and those letters which give the best insight into the author's character.

IV. Latin. Virgil—Selections from the Aeneid and from the Georgics. An effort will be made to give the student an intelligent appreciation of the literary merits of the author; scanning, mythology and historical setting will receive special attention.

V. Latin. This is our regular Freshman Latin and either half-year will be given. The majority of the students applying for the course will determine whether we take Livy or Horace. Required readings from all the courses will be assigned from the following books: Johnston's Private Life of the Romans; Cicero and His Friends, Boissier; Roman Life in the Days of Cicero, Church; Forsythe's Life of Cicero; Sellar's Poets of the Augustine Age; Comoarett's Virgil in the Middle Ages; Fairbank's Mythology.

VI. Greek. The courses in Greek will be adapted to the needs of students who desire work in Greek. Those students who have had one book of the Anabasis might read the remaining three books during the summer term and enter the Freshman class the following year.

MATHEMATICS.

Dr. Boyd and Mr. Petty.

I. Higher Arithmetic.—A course designed especially for teachers. Part of the time will be spent in a discussion of questions connected with the teaching of arithmetic.

II. Beginning Algebra.—A course designed for those who have never studied the subject, and also for those who have been conditioned in it.

III. Advanced Algebra.—A second course which will be fitted to the needs of the class desiring it. Pedagogical questions will receive attention.

IV. Plane Geometry.—This course will complete as much of the Plane Geometry as possible, and will be based on a new text illustrating the latest ideas in Geometry texts.

V. 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 subject.

VI. College Mathematics.—Courses in college subjects will be given in accordance with the demands for them.

MODERN LANGUAGES.

GERMAN.

Professor Melcher.

The courses offered in German will be arranged to suit the wants of three classes of students, viz: of beginners, of those who already have a grammatical knowledge of the languages, and of those who desire advanced work. The selection of the work and the method of instruction will be adapted particularly to the needs of the High School teachers.

I. First Course.—Bierwirth's Beginning Grammar, followed by Glueck Auf, Mueller and Wenckeback, Im Vaterland, Bacon, or similar elementary reading.

II. Second Course.—Bierwirth's Elements of German followed by such intermediate German as Storm's Immense; Hillern's Hoeher als die Kirche, or Eichendorff's Aus dem Leben eines Taugenichts, or equivalents.

III. Third Course.—The work will be selected from such standard authors as Schiller, Goethe, Lessing, etc.

FRENCH.

Professor Zembrod.

I. First Course.—Fraser and Squair's French Grammar, followed by light reading.

II. Second Course.—Selections to suit the wants of the class.

PHYSICS.

Professor M. L. Pence.

The following courses of study are offered to those who may be unable to attend the regular sessions of the University, and who may desire to prepare themselves for teaching Physics, or to do other work in Physical Science. These courses are also offered to students who wish to shorten their regular schedule of studies in the University. All persons who do any of the above work satisfactorily will receive the same credit as if the work had been done during a regular session of the University.

I. A Course in Elementary Text-Books Physics.—Required for entrance to the Freshman Class of the University.

II. A Course in Theoretical Physics.—This course is equivalent to the Freshman Engineer, or Sophomore Scientific, work in the University. It embraces Mechanics, Sound, Heat, Light, Electricity. These two courses will be fully illustrated by lectures and experiments with daily recitations.

III. An Elementary Course in the Physical Laboratory.—Corresponding to the work of Course II above.

IV. Advanced Work.—Work is also offered in Advanced Theoretical Physics and in Advanced Physical Measurements. The special line of work will be selected by the student.

SCHOOL OF EDUCATION.

Professor Noe, Associate Professor Bohannan.

I. 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 and social 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 processes; Imitiation in education; Educational agencies; Formal discipline. Text-book, lectures, readings, and reports. Five times a week.

II. History of Modern Education.—A survey of the development of educational institutions, curricula and aims in Europe and America from the Period of the Renaissance to the present time. Three times a week.

III. Rural Education.—Designed primarily for those wishing to fit themselves as supervisors of Rural schools. A study will be made of (a) the development, control and support of the Rural school system; (b) the course of study for the Rural schools; (c) supervision of instruction in the Rural schools; (d) the hygiene of the Rural school; (e) the Rural school as a social center; (f) the Rural school teacher. Three times a week.

IV. Supervision of Public Instruction.—Designed primarily for city superintendents, supervisors, principals, and teachers who are looking forward to supervisory positions. A study will be made of present day problems and tendencies including (a) elimination and retardation of pupils; (b) scheme for evaluating the efficiency of teachers and pupils; (c) the physical environment of the school; (d) the direction of teacher and pupils. Twice a week.

COLLEGE OF AGRICULTURE.

JOSEPH H. KASTLE, DEAN.

The summer courses in agriculture, while well suited to the needs of the ordinary student in such branches and to those of the practical farmer, are designed primarily to equip teachers who are preparing themselves to teach the natural sciences, agriculture, nature study, etc. Instruction in these several courses will be given by lectures, garden and field work and by practical work in live stock, dairying, and, as far as possible, by actual demonstration on the Experiment Station Farm.

Through the courtesy of Mr. James B. Haggin, the Elmendorf Farm, situated near Lexington, and perhaps the largest stock farm in the world, has been placed at the disposal of students in agriculture at the University. So that for actual field work, both as regards crops and live stock, our students are afforded opportunities that are probably unsurpassed by any in the world.

AGRONOMY.

Professor Roberts, Assistant Professors Kinney, Jones, Farra, Hendrick, and Instructor Kenney.

In agronomy the courses will include:

I. Course 1. Elementary principles of soil physics and soil fertility.

II. Course 2. Selection, care and testing of seeds and cultivation of farm crops, including rotations, leguminous crops and the relation of various crops to soil fertility.

III. Course 3. Adaptation of these subjects to facilities for instruction afforded by rural schools.

ANIMAL HUSBANDRY.

Professors Hooper and Good.

In animal husbandry the courses will embrace:

I. Course 1. Live stock judging, feeding, management and breeding.

II. Course 2. Dairying, the production and handling of milk, and butter making.

III. Course 3. The care of farm animals with special reference to the prevention of disease; also the detection and cure of the commoner ailments of farm animals, embracing a careful study of the application of the tuberculin test.

IV. Course 4. Beef cattle, sheep and swine; breeding, feeding, and judging beef cattle, sheep and swine. Visits will be made to the College Farm, Elmendorf and other stock farms.

BACTERIOLOGY.

Professor Bryant.

An elementary course in bacteriology, taking up mostly the physiology of bacteria, their relation to farm and household operations. Farm and home sanitation, principles of hygiene, and also bacteriology of foods will be treated. Work conducted by lectures and laboratory work.

BOTANY AND HORTICULTURE.

Professor Mathews, Assistant Professor Gilbert, Mr. McFarland.

The courses will be arranged to cover the following branches:

I. Course 1. Elementary botany, comprising a study of the physiology and structure of the seed plants.

II. Course 2. The morphology and classification of the lower plants, including a careful study of the use of the compound microscope.

III. Course 3. Principles of plant culture, embracing a study of the fundamental activities of plant life with special reference to the flower and vegetable garden, small fruits and the orchard; also including such practical details as propagation, seed selection, seed sowing, transplanting, pruning, spraying, etc.

ENTOMOLOGY AND ZOOLOGY.

Miss Didlake.

The laboratories of the Department of Entomology and Zoology will be open during the summer school for the benefit of pupils desiring instruction in these branches of science. Those contemplating teaching in the public school will be given an opportunity to study types of animals regarded as of special service to the teacher in giving instruction. Species of economic importance in the household, in the orchard, garden, and on the farm will be employed as far as practicable. Students interested in field work and nature study will have opportunities to collect and observe under direction in the country about Lexington, and if desired by trips to Natural Bridge and Torrent in the mountains. Methods of preserving material for class use and of making illustrative collections will be taught, using as a basis the material collected by students.

HOME ECONOMICS.

The Department of Home Economics will offer the following courses in the Summer School:

HOUSEHOLD ART.

Miss Buckman.

I. Hand Sewing. A course including the application of all fundamental plain and ornamental stitches; history and manufacture of implements;

study of textile fibres. The course will be adapted to the needs of beginners in sewing as well as to teachers of elementary sewing, with special reference to the latter. Materials for models will be furnished by the department; other materials by pupils. Lectures, Tues. and Thurs. Laboratory daily, 9-11:30.

II. Garment Instruction. This course includes drafting of patterns, cutting and making of garments, study of fibres and materials adaptable to the needs of those wishing to gain a practical, fundamental knowledge of machine sewing and to teachers of high school sewing. Material for garments furnished by pupils. Lectures, Mon. and Wed. Laboratory daily 9-11:30.

HOUSEHOLD SCIENCE.

Miss Chinn.

I. Food and the Principles of Cookery. The composition, source, kind, digestibility and nutritive value of different classes of food material; selection, preparation and preservation of foods. Laboratory 8-12 daily until July first. Lectures, twice weekly.

II. Practical Dietetics. A study of the balanced ration, the 100 calorie portion, and the study of foods to suit the needs of people under varying conditions of age, sex, occupation and evironment.

INTRODUCTION TO THE STUDY OF AGRICULTURE IN SCHOOLS.

Professor Bryant.

Since it is becoming more generally conceded that the school should serve the specific community interests as well as those of general education, a course giving suggestions for theoretical and practical agriculture in common and high schools has been designed primarily for teachers. The preparation and use of apparatus which in many schools must be improvised is discussed, also the organization and conduct of clubs. Projects suitable for schools and clubs. Work conducted by lectures, demonstrations and laboratory practice.

COLLEGE OF CIVIL ENGINEERING.

WALTER E. ROWE, DEAN.

COURSE IN DETAIL.

For information about fee see the Dean.

I. 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.

II. Mechanical Drawing.—Free-hand and mechanical lettering; geometrical problems; detail and dimensions drawing; pen topography.

III. 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.

IV. Graphic Statics.—Principles and Methods: Roof Trusses; Bridge Trusses; Locomotive Wheel Loads; Trusses with broken chords.

V. Railway Engineering.—Simple and compound curves. Changing radius. Shifting curve. Turnouts from straight track. Turnouts from curved track. Railroad location. Earthwork computation.

VI. Roof and Bridge Design.—Theory and design of roofs, bridges, standpipes, towers and other problems of structural interest.

VII. Stone Cutting.—Plane-sided surfaces; Structures containing developable surfaces; Structures containing warped surfaces; Structures containing double-curved surfaces.

VIII. 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.

I. 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.

II. Steam Boilers.—This is a combined practical and theoretical 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.

III. Valve Gears.—Recitations and lectures on modern practice in valve gear construction and theory, and some problems to be solved in the drawing room.

IV. 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.

V. Steam and Gas Laboratory Practice.—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.

I. Alternating Current Machinery.—Two courses are offered, one involving higher mathematics to a considerable extent, and the other presenting the characteristic modern a. c. apparatus in a descriptive manner.

II. Alternating Current Design.—A series of design problems will be provided to suit the conditions.

III. 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.

IV. Telephony.—A course of combined recitation and laboratory work covering the principles of telephony.

V. Direct Current Machinery.—Class room instruction involving description of modern types of d. c. machinery and apparatus.

VI. 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.

VII. Direct Current Design.—A series of problems will be provided covering the various phases of standard practice.

VIII. Direct Current Laboratory.—A wide variety of direct current experiments may be easily arranged to suit individual cases.

IX. Illumination and Photometry.—A course of combined lecture and laboratory work covering the principles of modern illumination.

MACHINE DESIGN AND MECHANICS.

I. Strength of Materials.—Class room instruction covering the ordinary materials used in engineering construction.

II. Analytical Mechanics.—This course involves such instruction as is usually given in college work, with a text-book of the character of I. P. Churchs'.

III. Kinematics.—Class room instruction, in connection with problems, to be worked out on the drawing board, covering the ordinary methods of transmitting motion mechanically.

IV. Machine Design.—A series of problems in the design of simple machines, or parts of machines, with recitations as may be necessary.

V. Laboratory Work in Testing Materials.—A comprehensive series of tests of the materials commonly used in engineering construction.

VI. Descriptive Geometry.—Combined recitation and drawing room work preparatory to design.

MECHANICAL DRAWING.

The work under this head is of an elementary character, and is similar to the freshman drawing. It is particularly intended for those who wish to learn the use of drawing instruments and drawing room practice. High school graduates may be able to obtain credit for freshman drawing by taking this course.

SHOP WORK.

I. Machine Shop Practice.—Practice in drilling, chipping, filing thread cutting, etc., and in running lathes, shapers, planers, and milling machines.

II. Forging.—A series of exercises covering the usual operations in hand forging.

III. Foundry Practice.—Exercises in making molds and cores, and in casting brass and iron.

IV. Woodworking.—Exercises involving the use of woodworking tools and machinery in pattern-making, wood lathe operation, and carpentry.

V. Lectures on Practical Mechanics.—As occasion may require, a series of lectures will be given in connection with the shop work.

COLLEGE OF MINES AND METALLURGY.

C. J. NORWOOD, DEAN.

COURSE FOR PRACTICAL MINERS, MINE FOREMEN AND MANAGERS.

Though the course is intended especially for miners, mine foremen, and managers who desire to improve their knowledge of the principles that underly correct methods of coal mining, it is also open to others who may wish to acquire some knowledge of mining. The course is under the direction of Professor C. J. Norwood, Dean of the College.

Persons desiring to prepare themselves in the technical qualifications required of mine foremen will find the course quite helpful.

Persons pursuing Correspondence Courses will find the 8 weeks of personal instruction beneficial. This course has the authority of the Board of Trustees of State University back of it, and each man who completes this course will be given a certificate showing this fact.

The session begins May 19, 1913; ends July 12th. By coming May 15th, you can attend the meeting of the Kentucky Mining Institute, which opens

on that date. The Board of Examiners of the State Mine Inspector's office has always held an examination at the close of the Practical Miners' Course, thus avoiding the extra trip to Lexington for this purpose.

Fee $10.00. Room and table board $2.50 to $3.50 per week. For further information, address

H. D. EASTON, E. M.,
College of Mines and Metallurgy, State University,
Lexington, Kentucky.

Instruction will be given in:

I. Coal Mining.

a. The different systems. Laying out the workings. Methods for thin and thick and for flat and pitching seams. Management of squeezes, etc.

b. Mining and Blasting. Various explosives. Evils from improper blasting. Dangerous and safe methods. "Safety" powders. Machine mining.

c. Supporting excavations, including the principles underlying timbering, the different methods of timbering, computing the strength of pillars, etc.

d. Ventilation. Methods of obtaining ventilation and of coursing, splitting, and regulating the current. Measuring the ventilation; use of anemometer, water gauge, etc. Study of furnaces and fans.

e. Haulage and drainage.

f. Sinking Shafts and Slopes. Safety appliances for shaft and slope mines.

II. Mine Gases and Testing.

a. Nature and origin of each. Indications of the presence of each.

b. Testing for explosive and inexplosive gases. Principle of the safety lamp, and various types of such lamps. Use of safety lamps, etc.

The instruction in mine gases is illustrated with experiments, and the effect of different precentages of marsh gas on the safety lamp flame is shown.

III. Explosions and Fires.

The various causes. Relation of coal dust to explosions, and management of dust. Relation of blasting to coal dust and other explosions. Demonstration of coal dust explosion. Prevention of explosions. Causes and management of fires.

IV. Surveying and Map Drawing.

Use of compass (or transit, as the case may be); putting up sights, marking off rooms at various angles, grading track (use of level), laying out curves,

etc. Drawing the mine map. Men may devote all of the course to surveying if they so desire.

V. Use of Mine Rescue Apparatus.

Different types of Apparatus. Practice in use of the Draeger Oxygen Helmet, and of the "Pulmotor" reviving apparatus.

The equipment used in demonstrating includes: A mine fan (running either exhaust or forcing), a working model of a Sirocco fan, anemometers, water gauge, safety lamps of various types, electric and acetylene lamps, gas-chamber for testing with safety lamps, gas-testing machine, Smith appliance for gas-testing in mines, apparatus for showing characteristics of gases and effect of red-hot coal-dust on carbon dioxide, coal-dust explosion box, spray nozzles, samples of various explosives, mine telephones, pneumatic mine signal, safety shaft-hoist, Cameron pump (dissected), Harrison coal puncher, coal and rock drills (Nixon rachet, pneumatic hammer, etc.), various makes of pit-car wheels, wire-rope and electric transmission-wire boards, mine trolley hangers, steel entry sets, 6-ton electric locomotive, surveying instruments, etc. Students taking surveying will provide themselves with drawing tools and material, which may be obtained in Lexington at reasonable prices.

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 special course in law, beginning June 10, 1913, 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 to 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.

GRADUATE SCHOOL.

ALEXANDER ST. CLAIR MACKENZIE, DEAN.

The graduates of State University or of other universities and colleges of equal standing, who desire to do graduate work in the State University Summer School for credit toward an advanced degree, are directed to correspond with Dr. A. S. Mackenzie, Dean of the Graduate School, prior to registration.

Part IV.

COMMENCEMENT, 1912.

AD

OR

COMMENCEMENT EXERCISES.

THURSDAY, JUNE 6, 1912, 10 A. M.

STATE UNIVERSITY

Invocation

MUSIC

ADDRESS: Professor Reuben Post Halleck, M. A., Louisville, Ky.

MUSIC

ORATION: The Elements of True Greatness.
Nathaniel Gray Rochester, Bachelor of Arts, Marion, Ky.
Class Representative

MUSIC

Conferring of Degrees and Delivery of Diplomas,
by Henry S. Barker,
President of the University

MUSIC

Benediction

DEGREES.

CONFERRED ON COMMENCEMENT DAY, 1912.

COLLEGE OF ARTS AND SCIENCE.

Bachelor of Arts.

Cora Temperance Creekmore	Lexington
Addie Lee Dean	St. Louis, Mo.
James Stephen Golden	Barbourville
Jessie Hamilton Jones	Monticello
Hugh Kelly	Calhoun
Virginia Clay McClure	Mt. Sterling
Henry Fields McKenny	Falmouth
Jesse Isadore Miller	Lexington
Hattie Noland	Richmond
Raymer Wendell Tinsley	Hartford
Derrill Wason Hart	Pisgah
Mary Irene Hughes	Maysville
Nathaniel Gray Rochester	Marion
Frances Alma Faulkner	Barbourville
Eloise Elizabeth Ginn	Lexington
William Blackburn White	Cloverport

Bachelor of Science.

Dolly Taylor Battaile	Lexington
Anna Louise Dean	Fredonia
Cleo Gillis	Lexington
Charles Byron Gnadinger	Lexington
Marion Myrl Harrison	Philpot
Joseph Mette Humble	Newport
Ruby Leon Marcum	Burnside
Lily Brandenburg Park	Frankfort
Frank Hereford Tompkies	Owensboro

Bachelor of Science in Agriculture.

William Collins	North Middletown
William Coleman Harrison	Shelbyville

Johannes du Plessis Oosthuizen.....Transvaal, S. Africa
William Septimus Taylor.....Beaver Dam
Henry Means Walker.....Rectorville

Bachelor of Civil Engineering.

William Dante Barrows.....Dixon
Harry Northcott Clagett.....Bowling Green
Thomas Evans Earle.....Dawson Springs
Joseph Millet Lewis.....Owensboro
John Dallas McMurtrey.....Burkesville
Herbert Lincoln Nagle.....Newport
John Edward Robertson.....Waddy
Robert Ambrose Robinson.....St. Louis, Mo.
Ernest Parker Robinson.....St. Louis, Mo.
Ralph Skiff.....Erlanger
Ernest Francis Schimpeler.....Louisville
John Barrett Thomas.....Falmouth
John Henry Wadsworth.....Ashland
John Rudolph Watson.....Lexington
Algernon Sidney Winston.....Sturgis
William Abithal Wallace.....Cerulean

Bachelor of Mechanical Engineering.

Walter Helm Ammerman.....Millersburg
Thomas Elmer Beatty.....Smithfield
James White Cary.....Versailles
James Ray Duncan.....Lexington
James Leonard Edelen.....Frankfort
Howard Cleveland Galloway.....Falmouth
Jake H. Gaiser.....Covington
Llewellyn Coons Hardesty.....Muir
Orie Willard Hollar.....Paris
William Henry Jaegle.....Louisville
Robert Leslie Jones.....Walton
Fred Stone Karn.....Owensboro
Harry George Korphage.....Louisville
Emanuel Joseph Kohn.....Louisville
James Thomas Lowe.....Williamstown
Gilcin Finley Meadors.....Pine Knot
Vincent Bartlett Milligan.....Lexington

Alexander Timberlake Ramsay.....O'Bannon
Shirley Dean Saunders.....Franklin
Henry Burton Shoemaker.....Pendleton
Herman Frederick Vogliotti.....London

Bachelor of Mining Engineering.

James Bristow Giltner.....Carrollton
William Bruce Hager.....Owensboro
William Skinner Thiesing.....Covington
William Bradley Johnston.....Lexington

Bachelor of Law.

Leeburn Allen.....Campton
August Adolph Bablitz.....Lexington
Joseph Birchel Campbell.....Barbourville
Carl C. Croft.....Fulton
Harry Barkley DeAtley.....Tolesboro
Richard Vinson Garred.....Louisa
Jones Otho Gill.....Marion
Thomas Jefferson Lee.....Inverness, Miss.
Alexander St. Clair Mackenzie.....Lexington
Howard D. McElroy.....Buda, Texas
John Elvis Miller.....Aid, Mo.
Herbert Holbrook Moore.....Louisa
George Bain Morrison.....Lexington
Charles Otey.....Marion, Ill.
Stephen Lamont Pannell.....Greenville
Walton Perkins.....Williamsburg
James Garfield Pfanstiel.....Morning View
William Abner Stanfill.....Barbourville
William Henry Townsend.....Glensboro
Newton Willard Utley, Jr.....Eddyville
Edward Perry Wesley.....Middlesboro
P. A. Whitacre.....Greenville, Ohio
James Azure Wilmore.....Gradyville

HIGHER DEGREES.

Master of Arts.

Alvin Clarence Elliott—
Thesis: The Origin and Growth of the Veto Power in England and the United States.
James Russell Robinson—
Thesis: James Garrard: Second Governor of Kentucky.
Mary Scott Spencer—
Thesis: Woman's Share in Economic and Literary Evolution.

Master of Science.

William Tudor Pearce—
Thesis: The Precipitation of Sulphuric Acid in the Presence of Thorium.
William Rodes, Jr.—
Thesis: The Acidity of Commercial Fertilizers Containing Acid Phosphate in Relation to Their Effect on Soil Fertilizers.
Robert Hoover Spahr—
Thesis: A Discussion on the Measurement of Wave Length and the Velocity of Light.

Civil Engineer.

Benjamin Duncan Bell—
Thesis: Geodetic Work of the U. S. Great Lake Survey.
Samuel Boin Coleman—
Thesis: Topographical Survey of Taal Volcano, Philippine Islands.
James Floyd Chambers—
Thesis: Design of Reinforced Concrete Fireproof Buildings.
Cott C. Kelley—
Thesis: Location and Construction of Seven Miles of Railroad for the Birmingham Southern Railroad Company.
Benjamin Ellis Warren Stout—
Thesis: Design and Details of Suspension Bridge for U. S. Government.

Mechanical Engineer.

John James Curtis—
Thesis: The Design of a Vibratory Testing Machine.
Ernest England Horine—
Thesis: Increasing the Efficiency of a Steam Power Plant.

John Sherman Horine—

Thesis: The Design and Development of a Small Gasoline Engine for Commercial Use.

Charles Jablow—

Thesis: 200,000-Inch Pound Torsion Testing Dynamometer.

Philip M. Riefkin—

Thesis: Government Coal Purchases Under Specifications with Analysis for the Fiscal Year 1909–10.

Perin Rule—

Thesis: Design and Operation of a Thin-Lined Water Cooled Blast Furnace.

John James Tigert—

Thesis: An Ideal Course of Instruction in Mechanical Drawing and Manual Training for a City High School.

John Joel Yaeger—

Thesis: A Complete Design of the Heating and Ventilating System of a Modern Twenty-four-Room School Building.

Electrical Engineer.

Clarence Sanson Bennett—

Thesis: Complete Tests of Two Synchronous Motor Sets Synchronous Motors A. T. I. 10-560-720-13200 Volts Direct Connected to Direct Current Machines M. P. C. 4-5-720-1500 Volts at Full Load and 1575 Volts at Full Load.

Roy Caldwell Hopgood—

Thesis: The Design, Manufacture and Uses of the Present Telephone Cable.

Alphon Penrod—

Thesis: Railway Telephone Train Dispatching.

William Edwin Freeman—

Thesis: The Loading of Long Distance Telephone Lines.

Master of Laws.

Thomas Harris Burruss, Jr.—

Thesis: The Growth and Development of Sociology.

Edwin Regur Sweetland—

Thesis: Case Book on Partnership.

Wilbur Rush Smith, Jr.—

Thesis: International Law.

John Mason Brown—

Thesis: On the Law of Contracts.

HONORARY DEGREES.

Doctor of Laws.

James Bennett McCreary.....Frankfort
Reuben Post Halleck.....Louisville
Shackelford Miller.....Louisville
John Maurice Lassing.....Frankfort
Robert Hiner Winn.....Frankfort

Doctor of Science.

Ernest Pitney Chapin.....Louisville
Harrison Garman.....Lexington

Master of Arts.

Anna Jackson Hamilton.....Lexington

HONOR GRADUATES.

Honors are given in each Department of the University to those students who attain an average grade of 93 out of a possible 100.

Arts and Science.

Addie Lee Dean
Anna Louise Dean
Charles Byron Gnadinger
Marion Myrl Harrison

Agriculture.

Johannes Du Plessis Oosthuizen
William Septimus Taylor

Civil Engineering.

Thomas Evans Earle
John Barrett Thomas

Mechanical Engineering.

James Ray Duncan
Robert Leslie Jones

Part V.

REGISTER OF STUDENTS, ETC.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

*Allen, Leonard Barnes (B. C. E., 1899).....Covington
Railway Engineering.

*Anderson, Henry Clay (B. M. E., 1897).....Ann Arbor, Michigan
Mechanical Engineering.

Arnold, Samuel Allen (B. S., Asbury College, 1910).....Hutchison
Latin, Psychology.

*Atkins, Robert Ryland (B. E. M., 1910).....Lexington
Mining Engineering.

Bates, Edgar Fleming (B. S., Central University, 1912).....Danville
Physics, Engineering.

Battaile, Dolly (B. S., 1912).....Lexington
Mathematics, German, Physics.

*Bogard, George (B. M. E., 1908)..... Richmond
Mechanical Engineering.

*Bradford, Theo. Homer (B. M. E., 1903).....Butte, Montana
Mechanical Engineering.

*Browning, John Keith (B. M. E., 1908).....Cincinnati, Ohio
Mechanical Engineering.

*Case, Daniel Morris (B. M. E., 1896).....Lexington
Mechanical Engineering.

*Clark, William Frederick (B. M. E., 1910).....Brooklyn, New York
Mechanical Engineering.

*Collier, Wm. Henry (B. M. E., 1897).....Nashville, Tennessee
Mechanical Engineering.

*Collings, B. H. (B. C. E., 1911).....Columbus, Ohio
Civil Engineering.

Corbett, Lambert Seymour (B. S., Mass. Agriculture College)
Jamaica Plain, Mass.
Animal Husbandry, Forage Crops, Breeding.

*Cornelison, Hubert (B. M. E., 1908).....Jacksonville, Florida
Mechanical Engineering.

*Non-resident.

*Cox, Spencer Foster (B. M. E., 1902).....San Bernardino, California
Mechanical Engineering.

*Curtis, James Stewart (B. M. E., 1908).....Dallas, Texas
Mechanical Engineering.

*Cornish, W. R. (B. M. E., 1909).....Cleveland, Ohio
Mechanical Engineering.

Daugherty, Helen Lucile (A. B., 1909).....Paris
French, History.

Dean, Addie Lee (A. B., 1912).....St. Louis, Missouri
English, Psychology, German.

Downing, Harold Hardesty (B. C. E., 1908).....Lexington
Civil Engineering, Mathematics.

*Duck, Berkley Wilson (B. M. E., 1897).....Indianapolis, Indiana
Mechanical Engineering.

*Dugan, F. C. (B. C. E., 1910).....Cincinnati, Ohio
Civil Engineering.

*Fox, W. C. (B. C. E., 1910).....Dayton, Ohio
Civil Engineering.

*Fry, Henry Skillman (B. M. E., 1904).....Rochester, Pennsylvania
Mechanical Engineering.

*Gaither, Morton Wm. (B. M. E., 1902).....City of Mexico, D. F., Mexico
Mechanical Engineering.

*Garred, Ulysses A. (B. M. E., 1894).....Anaconda, Montana
Mechanical Engineering.

Gillis, Cleo (B. S., 1912).....Lexington
Education, Household Arts, Household Science.

Grimes, John Frank (B. C. E., 1910).....Lexington
Civil Engineering.

*Hall, James Henry (B. M. E., 1910).....Idamay
Electrical Engineering.

*Hamilton, Wm. Perry Browning (B. M. E., 1908).....Cincinnati, Ohio
Mechanical Engineering.

*Harrison, William Coleman (B. S., Agr., 1912).....Shelbyville
Animal Husbandry, Bacteriology, Advanced Dairying.

*Hopgood, Roy Caldwell (B. M. E., 1906).....Chicago, Illinois
Mechanical Engineering.

*Howard, Styles Trenton (B. M. E., 1904).....Clemson College, S. C.
Mechanical Engineer.

*Non-resident.

*Hudgins, Thomas Frederick (B. M. E., 1909).....Lafayette, Indiana
Electrical Engineering.

*Hunt, Robert Bruce (B. M. E., 1901).....St. Augustine, Florida
Mechanical Engineering.

*Johns, Charles Ashley (B. M. E., 1909).....Chicago, Illinois
Electrical Engineering.

*Johnson, Frank Y. (B. M. E., 1904).....Chicago, Illinois
Mechanical Engineering.

*Johnson, Hampton W. (B. M. E., 1904).....Scranton, Pennsylvania
Mechanical Engineering.

Koch, Pieter (B. S., Agr., 1912).....Middleburg, Transvaal, S. A.
Geology, German, Tobacco Culture.

*Kuebler, Chester Arthur (B. M. E., 1910).....Cincinnati, Ohio
Electrical Engineering.

Lancaster, John Wilbur (B. Ped., 1906).....Georgetown
Education, Soil Physics, Chemistry.

*Lester, Arthur Vane (B. C. E., 1900).....Dayton, Ohio
Civil Engineering.

*Logan, Ben Harrison (B. M. E., 1910).....St. Charles, Missouri
Mechanical Engineering.

*Lowry, Hiter H. Jr. (B. M. E., 1909).....Chicago, Illinois
Electrical Engineering.

*Lytle, H. G. (B. C. E., 1911).....Flemingsburg
Civil Engineering.

*McDowell, Omar (B. M. E., 1906).....Rome, New York
Mechanical Engineering.

*Magee, Wallace Hopkins (B. M. E., 1906).....Richmond, Virginia
Electrical Engineering.

Mann, Charles G. (A. B. Miami University, 1907).....Clay City
Geology, Sociology.

*Marshall, C. W. (B. C. E., 1910).....Gary, Indiana
Civil Engineering.

Mastin, James Edward (B. S., 1911).....Versailles
Food Chemistry, Bacteriology, English.

*Matthews, William (B. M. E., 1908).....Los Angeles, California
Mechanical Engineering.

*Merchant, George Brite (B. C. E., 1911).....Chicago, Illinois
Structural Steel Design.

*Non-resident.

Miller, Jesse Isidore (A. B., 1912).....Lexington
English, History.

*Mills, George Pemberton (B. M. E., 1910).....Schenectady, New York
Electrical Engineering.

*Muncy, Victor Emanuel (B. S., 1891; M. S., 1907; B. M. E., 1908), Cincinnati, Ohio
Mechanical Engineering.

*Naylor, F. L. (B. C. E., 1911).....Hickman
Civil Engineering.

*Newman, James C. (B. M. E., 1906).....Johnstown, Pennsylvania
Mechanical Engineering.

Oosthuizen, Johannes du Plessis (B. S., Agr., 1912)....Pretoria, Transvaal
Plant Physiology, Agr. Chemistry, Soils.

Ott, Thomas Foreman (B. S., 1907).....Lexington
Chemistry, Bacteriology.

*Raney, Murray (B. M. E., 1909).....Springfield, Illinois
Mechancial Engineering.

*Rankin, Fred Jones (B. M. E., 1907).....Fort Collins, Colorado
Electrical Engineering.

*Roberts, Virgil D. (B. M. E., 1905).....Weatherford, Texas
Mechanical Engineering.

Rodes, William (B. S., 1908).....Lexington
Agricultural Chemistry, Soil Physics, French.

Routt, Grover Cleveland (B. S., 1911).....Gee
Biology, English, Chemistry.

*Seibert, Frank T. (B. M. E., 1901).....Nashville, Tennessee
Mechanical Engineering.

*Shanklin, Shelby (B. M. E., 1910).....Schenectady, New York
Electrical Engineering.

*Smiley, Proctor K. (B. M. E., 1908).....Spring Grove, Minnesota
Mechanical Engineering.

*Smith, Milton Sears (B. M. E., 1908).....Buffalo, New York
Mechanical Engineering.

Spahr, Robert Hoover (B. S., Washington and Lee, 1909).....Lexington
Civil Engineering.

*Stivers, Sherman Harry (B. C. E., 1910).....Paris
Civil Engineering.

*Non-resident.

*Taylor, Orville Heber (B. C. E., 1911).....Beaver Dam
Railway Operations and Management, Political Economy, English.

Terrell, Daniel Voiers (B. C. E., 1910).....Bedford
Civil Engineering.

*West, Howard Murphy (B. M. E., 1905).....New York, New York
Mechanical Engineering.

Wilhoit, Arza Lytle (B. M. E., 1908).....Lexington
Mechanical Engineering.

*Yager, John Joel (B. M. E., 1907).....Buffalo, New York
Mechanical Engineering.

UNDERGRADUATES.

Abbreviations.

Classes.

1. Freshman.
2. Sophomore.
3. Junior.
4. Senior.

Sp. Special Student.

Courses.

Agr., Agriculture.
Arts, Arts.
Sci., Science.
C. E., Civil Engineering.
H. E., Home Economics.
Educ., Education.
Mn. E., Mining Engineering.
M. E., Mechanical Engineering.
Law, Law.
Sh. Agr., Short Course in Agriculture.
R. & H. E., Rural and Highway Engineering.

Aaron, George D.....M. E. 1.....Liberty
Acker, Annabel.....Arts 4.....Paducah
Acker, Jessie Elizabeth.....Agr. 2.....Paducah
Adams, Chester Dorland.....Law Sp.....Lexington
Adams, John Hurst.....Arts 1.....Ewing
Adams, Raymond F.....10 Wks. Agr.....Hickman
Adams, Robert Edward.....10 Wks. Agr.....Hickman
Agnew, Mary Annie.....Agr. 1.....Sebree
Albert, Russell Foster.....C. E. 1.....Nolin
Alexander, Elizabeth Bell.....Agr. 1.....Midway
Alexander, Hiram Louis.....Law Sp.....Lexington

*Non-resident.

Allen, Henderson H.	Agr. Sp.	Printer
Almstedt, William Cornelius	C. E. 3	Louisville
Altsheler, Lillian M.	Agr. Sp.	Horse Cave
Ammerman, James Lester	Sub-Fresh	Cynthiana
Anderson, Harry Powell	C. E. Sp.	Russellville
Anderson, Virginia Frances	Agr. 1	Lexington
Andres, Paul Maxmillian	M. E. 1	Louisville
Appleton, Kathryne	Arts Sp.	Lexington
Armistead, William Cobbs	M. E. 4	Madison, Tenn.
Armstrong, Evamonde	Agr. 1	Lexington
Arnold, George Bowen	M. E. 2	Earlington
Arnold, Ira Lee	Agr. 2	Owenton
Arnold, Jose Julian	Law Sp.	Lexington
Ashby, Paul Elliott	Agr. Sp.	Onton
Ashcraft, Arthur Lee	Arts Sp.	Brandenburg
Atkins, James William	Mn. E. 3	Lexington
Atwile, Albert Lee	C. E. 3	Hickman
Aud, Joseph Guy	M. E. 2	Owensboro
Auxier, John Friend	Law 3	East Point
Babbage, Virgil Alexander	Agr. 3	Cloverport
Bacon, Philip Edloe, Jr.	M. E. 2	Trenton
Bailey, Esther Mae	Arts 2	Lakin, Kansas
Bailey, James Yost	Agr. 2	Adairville
Baker, Grace Elizabeth	Sci. 2	Lexington
Baker, Ruth	Sci. 2	Lexington
Barber, George Earl	Agr. Sp.	Owingsville
Barker, Carolyn Maxwell	Agr. Sp.	Louisville
Barker, Clyde Russell	Arts 1	Brooksville
Barker, Harold Yancey	M. E. 2	Lexington
Barkley, Marie Rodes	Agr. 1	Lexington
Barnett, Allison Joseph	Law 2	Hartford
Barnett, Brinkley	M. E. 4	Somerset
Barnett, James	Law 2	Campbellsburg
Barron, John Field	M. E. 2	Owensboro
Barron, William Evan	Law Sp.	Lexington
Barrow, John Parham	Mn. E. 4	Lexington
Barth, Herbert Edwin	M. E. 2	Louisville
Bartlett, Lois	Agr. 2	Rockport
Bass, Robert Duke	R. & H. E.	Leslie
Bassett, Luke D.	Sub-Fresh	Josephine
Bastin, Paul Allyne	Arts 1	Lexington

Batsel, Max Carter	M. E. 2	Fulton
Bauer, Bessie	Sci. 1	Maysville
Baughn, William L.	R. & H. E.	Lexington
Baxter, William Jefferson	Law 4	Nicholasville
Bean, Charles Y.	Law 2	Lexington
Beard, Frank Bryant	Sh. Agr. 1	Shelbyville
Beard, Judith Ellen	Arts 1	Hardinsburg
Beaumont, Wortham Conkling	Arts Sp	Mayfield
Bedinger, Elizabeth	Arts 4	Walton
Behrman, Abe Sidney	Sci. 3	Covington
Bell, Eva Fern	Arts 1	Madisonville
Bell, Jeanette Torrance	Arts 2	Fulton
Bell, Lora Marie	Arts 1	Madisonville
Bennett, Arthur Ray	M. E. 3	Narrows
Berkshire, W. Stewart	Law 2	Petersburg
Bernhardt, Carl Louis	Agr. 1	Newport
Betscher, Edna	Agr. 1	Cincinnati, O.
Bettinger, Carl	Sci. 1	Covington
Bierbaum, Robert Louis	Agr. 2	Louisville
Bickley, Eufaula Fain	H. E. Sp	Bristol, Tenn.
Bird, Horace Philemon	Unclassified	Shelbyville
Birk, Glover McMurtry	Sci. 1	Owensboro
Bishop, William Armstrong	M. E. Sp.	Cynthiana
Blackburn, Albert Ricketts	M. E. 2	Petersburg
Blackburn, William Graves	Sh. Agr. 1	Georgetown
Blaker, Edward Tomlinson	M. E. 3	Cincinnati, O.
Blanchet, Louie Paubel	Arts 3	Glencoe
Blanchet, Sebastian A.	Sub-Fresh	Glencoe
Blevins, Charles Elmo	Arts 3	Owingsville
Bohannon, Frank Long	Sh. Agr. 1	Versailles
Bohrer, Rachael Marie	Arts 1	Bellevue
Bolyn, Guilford	Sci. 1	Ballard
Bolling, John Esten	M. E. 2	Louisville
Bond, Jim Ed	Sh. Agr. 1	Versailles
Booth, Frances Rollinson	Unclassified	Poughkeepsie, N. Y.
Boreing, Iva Belle	Arts 4	London
Bosley, Alfred D.	Agr. 1	Owensboro
Bosley, Charles Leon	C. E. 4	Owensboro
Bowers, Charles Leroy	Arts 1	Covington
Boyd, Marie Bruce	M. E. Sp.	Owensboro
Bradshaw, Joe Bryan	Sh. M. E.	Moreland

Brann, Edward Dudley	Sh. Agr. 1	Fulton
Brashear, Sampson B.	R. & H. E.	Hazard
Breslin, Amy Isabelle	Sci. 2	Louisville
Brewer, Elizabeth Carleton	Sci. 1	Eminence
Bridges, John Allen	Sh. Agr. 1	Frankfort
Brooke, Minott	M. E. 2	Veechdale
Brooks, Rexie	Arts 2	Murray
Brown, Coleman T.	M. E. 2	Webbs
Brown, Edith Hazel	Agr. 1	Lexington
Brown, Eva Marguerite	Sci. 2	Lexington
Brown, John Lloyd	Agr. 3	New Providence, Iowa
Brown, Paul Dennis	Agr. 3	Somerset
Browning, Iley Baker	Sci. 1	Paducah
Brownlie, Verner Conger	Mn. E. 1	Pineville
Brueckner, Arthur Louis	Agr. 3	Bellevue
Bryant, Hal Farnsworth	Agr. 2	Lexington
Bryant, Roberta Reid	Agr. Sp.	Lexington
Bryson, Arthur Titus	Arts 4.	South Portsmouth
Buchignani, Elvira Frances	Agr. Sp.	Lexington
Buchignani, Teresa Eugenia	Arts 2	Lexington
Burnaugh, Harry Maurice	Law 3	Paris
Burr, Duke Bowden	Sh. Agr. 2	Adairville
Burrier, Mary King	Agr. 2	Nicholasville
Burruss, Grant Davis	Law 3	Madison, Georgia
Burton, Cecil Madison	M. E. I.	Eminence
Burton, Clyde O.	Sub-Fresh	Bowling Green
Bushong, Perry Wicliffe, M. D.	10 Wks. Agr.	Edmonton
Bussey, James R.	Law 4	Moscow
Button, Thomas Logan, Jr.	Sh. Agr. 1	Bedford
Byers, James Elliott	C. E. 2	Ghent
Byrd, Burnie	Law Sp.	Lexington
Cain, Frank Davis	C. E. 4	Morton's Gap
Caldwell, Will Perkins	R. & H. E.	Danville
Campbell, David Patterson	C. E. 1	Louisville
Campbell, George Frances	M. E. 2	Butler
Campbell, Joseph Birchel	Arts 4	Barbourville
Campbell, Wallace Voiers	Unclassified	Campbellsburg
Capers, Ellison Howe	Agr. 2	Lexington
Carman, Armiel	Agr. 1	Mayfield
Carrithers, William Stanley	M. E. 3	Taylorsville
Carter, Joseph Carlyle	Law 2	Mayfield

Carter, William Guy	Agr. Sp.	Mayfield
Cary, Elizabeth Robinson	Arts 4.	Versailles
Cassady, Earle	Arts 3	Inez
Cassidy, Laura	Arts 2	Lexington
Cassidy, Margaret	Sci. 1	Lexington
Castro, Antonio de Oliviem	Unclassified	Brazil
Catlett, Richard Kimball	Sh. Agr. 1	Clarksville, Tenn.
Caudill, Samuel Jefferson	Mn. E. 1	Cannel City
Caywood, Logan Bentley	M. E. 2	Hanly
Chalkley, Eunice	Agr. 1	Covington
Chambers, Alvin Lee	C. E. 2	Nicholasville
Chambers, John Sharpe	Sci. 4	Murray
Chambers, William Wayne	Law 2	Kensee
Cheatham, Ella Mae	Sci. 2	Louisville
Cherry, George L.	M. E. 1	Bowling Green
Chestnut, David Lee	Agr. 2	Trenton
Chorn, Sarah Marshall	H. E. Sp.	Lexington
Chrisman, George Addison	Law 4	Nicholasville
Cisco, Morton Lee	Law 2	West Liberty
Clark, Ernest Harold	M. E. 1	Lexington
Clark, Frederick Roy	Sci. 1	Williamstown
Clarke, Marcus Jerome	Agr. 1	Owensboro
Clarke, Mary Agnes	Unclassified	Lexington
Clarke, William Whitlock	C. E. 1	Owensboro
Claybrooke, Ruth	Agr. Sp.	Springfield
Clore, Walter Kenneth	Agr. 2	Ludlow
Cocke, Paul Lucas	C. E. 3	Louisville
Cockrell, Rebecca Wilson	Agr. 3	Lexington
Cockrell, Katherine Albin	M. E. Sp.	Lexington
Cody, Tom Henry	C. E. 1	Hindman
Coffey, Arthur	Sh. Agr. 1	McKinney
Colbert, Alvin Hovey	M. E. 4	London
Colegrove, Anna Elizabeth	Arts 2	Ashland
Coleman, James Henry	Arts 1	Oakgrove
Coleman, Levi Oscar	C. E. 3	Paradise
Collins, Anna Buckner	Sub-Fresh	Mount Eden
Collins, William Joel	M. E. 1	Richmond
Combs, Townsel	C. E. 2	Smithsboro
Congleton, William Emory	Arts 2	Lexington
Conner, Anna Eliza	Sub-Fresh	Paris
Converse, Julian Langston	Mn. E. 1	Louisville

Cooke, Samuel Edwards	C. E. 2	Harrodsburg
Coons, Bettie Louise	Agr. 1	Lexington
Copple, Robert A.	C. E. 1	Covington
Corn, James Franklin	Arts 1	Harrodsburg
Cornelison, Ferol Mae	Sci. Sp.	Lexington
Cory, Lindley Louise	Agr. Sp.	Lexington
Cottrell, Robert Boyd	M. E. 3	Owensboro
Coughlin, John J.	Agr. 2	Augusta
Courtney, Samuel Newton	M. E. 2	Owensboro
Covington, Harry Stockdell	Law Sp.	Lexington
Covitz, Louis David	Arts 4	Lexington
Cowherd, Willie C.	10 Wks. Agr.	Campbellsville
Cox, Ella Lee	Arts 1	Owensboro
Cox, Henry Clay	Agr. 1	West Liberty
Cox, Paul Vernon	M. E. Sp.	Fredonia
Cox, Winfred White	Mn. E. 2	West Liberty
Craig, Albert Gallatin	Agr. 2	Ghent
Cram, Harley McDonald	Agr. 1	Walton
Cramer, Hiram Cable	R. & H. E.	Lexington
Cramer, Minnie Toler	Agr. 2	Lexington
Crawley, William Patrick, Jr.	M. E. 2	Louisville
Creech, George Washington	M. E. 3	Pineville
Creekmore, Maude	Arts 4	Lexington
Cregor, Charles Springer	M. E. Sp.	Lebanon
Cregor, Minton	Agr. Sp.	Springfield
Crenshaw, Albert Dabney	Law 4	Cadiz
Croan, Walter Bruce	M. E. 2	Shepherdsville
Croft, Paul Howard	C. E. 3	Fulton
Cromwell, Henry Frye	Sci. 1	Cynthiana
Cross, William Caldwell	M. E. 3	Louisville
Crosthwaite, John Scearce	M. E. 4	Lexington
Crow, John K.	Sci. 1	Sebree
Crowder, Orvel Wendel	M. E. Sp.	Louisville
Cruickshank, Grace Anderson	Sci. 2	Lexington
Cruickshank, Lucille Harrison	Agr. 1	Lexington
Crum, Frank Moore	Sub-Fresh	Inez
Cubbage, Allen Percy	Arts 1	Leitchfield
Cunningham, James Owen	Sci. 1	Irvington
Dabbs, Grace Truman	Arts 1	Morgantown
Dabney, Robert C.	Sci. 3	Hopkinsville
Dagley, Birdie Emma Iola	Arts Sp.	Lexington

Dale, William C.....Sh. Agr. 1.....Finchville
Danforth, Edward Friend.....Sci. 3.....Hopkinsville
Darnaby, Ernest Heathman.....Agr. 2.....Clintonville
Darnall, Ina Marian.....Arts 1.....Paducah
Darwin, Adelin Caroline.....H. E. Sp.....Evansville, Tenn.
Davidson, Carl Rogers.....M. E. 1.....Lexington
Davis, Eleanor.....H. E. Sp.....Georgetown
Davis, William Terry.....Agr. 2.....Fulton
Day, William.....M. E. Sp.....Winchester
Dean, Ada Bransford.....Agr. 2.....Owensboro
Dean, Edith Cary.....Arts 2.....Owensboro
Deering, John Stratton.....M. E. 1.....Nicholasville
Dehler, George Kellner.....Arts 1.....Louisville
Denham, Clarence Wilder.....Sci. 3.....Williamsburg
Denton, Josephine Buford.....M. E. Sp.....Lexington
Desha, Helen Elizabeth.....Arts 2.....Paris
Devereux, Thomas Francis.....Law Sp.....Lexington
Dickinson, Guy Leslie.....Law 2.....Barbourville
Dickinson, William Reid.....Sci. 1.....Glasgow
Ditto, David Lewis.....Agr. Sp.....Vine Grove
Dix, William Hewitt.....M. E. 1.....Stephensport
Dixon, Paull Errett.....Law 2.....Glasgow
Dobrowsky, Harry Benjamin.....Sci. 3.....Richmond
Donohoo, David D.....Arts 3.....Mt. Orab, Ohio
Doris, Kenneth.....M. E. 2.....Dixon
Dorsey, Stewart Arnette.....Agr. Sp.....Carlisle
Dotson, Clifford T.....Sub-Fresh.....Olmstead
Downing, Columbus Gibson.....Agr. 2.....Lexington
Doyle, Justin Laymen.....Law 4.....Ilion, N. Y.
Drake, Ernest Gay.....M. E. 1.....Lexington
Duff, James Mitchel.....Sh. Agr. 1.....Rogersville, Tenn.
Duke, Basil W.....C. E. 1.....Smith's Grove
Duke, Spottswood Wellford.....M. E. 1.....Covington
Duncan, Carroll Allen.....C. E. 3.....Anchorage
Duncan, Henry Russell.....Arts 3.....Avoca
Duncan, Scott Marion.....Agr. 1.....Louisville
Dunlap, Branham.....Sh. Agr. 1.....Versailles
Dunn, Charles Kemper.....M. E. 1.....Lancaster
Dunn, Edgar Hart.....Law 4.....Murray
Dunn, Vera.....Arts 1.....Murray
Dunwoody, Charles Gunn.....Law 2.....Hickman

Durham, Jerome Parker	Sub-Fresh	Central City
Easley, John Plummer	Sh. Agr. 2	Stamping Ground
Easley, William Jeffrey	Agr. 1	Lexington
Eastin, Eckford Preston	M. E. 2	Lexington
Eblen, Viola Moss	Arts 4	Henderson
Ecker, Jesse Howard	Sci. 2	Louisville
Edens, Carl Bedford	Sub-Fresh	Allen, Texas
Edmonds, Eugene Allen	M. E. Sp.	Winchester
Edwards, Aleene Bradford	Arts 2	Butler
Edwards, Ordie Morton	Arts 1	Caneyville
Edwards, William Harvey	Arts 3	Versailles
Ehrlich, Robert Lee	C. E. 2	Ludlow
Eichhorn, Theodore Frederick	M. E. 2	Cynthiana
Eimer, Edwin John	Sci. 1	Newport
Elam, Batner Frederick	M. E. Sp.	Louisa
Eldridge, Elizabeth Fearn	Arts 2	Lexington
Elliott, Dennie David	Agr. 1	Humphrey
Elliott, Robert Reeves	Mn. E. 1	Paducah
Elliott, Wiljah Boen	Arts Sp.	Lexington
Ellis, Clenet R.	Sub-Fresh	Murray
Elston, Charles B.	Agr. 2	Turner's Station
Emmert, Louis J.	Law 2	Wheeling, W. Va.
Engle, Joseph C.	M. E. Sp.	Birdseye
Epperheimer, Lewis Claud	Law Sp.	Paducah
Estes, Lila Caye	Arts 1	Lebanon
Estill, A. Douglas	Sh. Agr. 2	Farmdale
Eubank, Warren Lyddane	Law 2	Lexington
Evans, Lynn Barkley	M. E. 2	Lebanon
Eversole, John	M. E. 2	London
Faris, Fred	Law 4	Lexington
Farley, William C.	R. & H. E.	Lexington
Farmer, Henry Lester	C. E. 4	Harlan
Farra, Anne Elizabeth	Agr. 1	Nicholasville
Farrell, Jane M.	H. E. Sp.	Lexington
Faulkner, Edward Hubert	Agr. 3	Lot
Faulkner, Frank Vernon	Law Sp.	Barbourville
Feaman, Philip Birch	Sh. Agr. 2	Louisville
Fearing, Henry Lincoln	M. E. 1	Olympia
Felix, Douglas Duncan	Arts 4	Hartford
Felix, Herbert Frank	Arts 1	Hartford
Field, Isabel	Arts Sp.	Lexington

Field, Jean Olive	Sci. 1	Lexington
Field, John Willis	Sh. Agr. 1	Versailles
Finley, Kimmel Hart	C. E. 1	St. Charles
Fish, John Shuff	Agr. 1	Georgetown
Fisher, James Newman	M. E. 3	Versailles
Fister, Wilbur Earl	Unclassified	Bellevue
Fitzpatrick, Walter Winston	Agr. 4	Somerset
Fletcher, Charles Warren	R. & H. E.	Lexington
Floyd, Orestes Foraker	Agr. 4	Hustonville
Fogg, R. J.	M. E. 1	Lexington
Ford, John Fielding, Jr.	Law Sp.	Georgetown
Foreman, Dollie Campbell	Arts 2	Taylorsville
Forsyth, Frank James	M. E. 4	Pikeville
Foster, George Coleman	Agr. 1	Marion
Foster, John Rollie	Mn. E. 4	Flemingsburg
Foster, Richard Allan	Arts 1	Marion
Foster, Richard White	Sh. Agr. 2	Richmond
Fowler, Earl Louis	Law 2	Waverly
Freeman, Tee	C. E. 2	Burgin
Fried, Elizabeth Anna	Agr. 4	Lexington
Friel, Gaylord Norton	Mn. E. 2	Ashland
Frost, Sue Hunt	Arts 1	Louisville
Fullenlove, Mary Elisabeth	Arts. Sp.	Louisville
Fuller, J. Myers	Sub-Fresh.	Carlisle
Gaines, Jane Edna	Arts 1	Frankfort
Gaines, Juliette Samuel	Arts 4	Frankfort
Gaither, Donald Magoffin	M. E. 3	Harrodsburg
Galanty, Abe Davis	Sci. 1	Maysville
Galbraith, Harry C.	Agr. 2	Brooksville
Gallaher, Raymond Walton	Sci. 1	Owensboro
Galloway, Emerson	Agr. 2	Paris
Garland, Lawrence Joseph	M. E. Sp.	Lexington
Garman, Philip	Sci. 4	Lexington
Garrett, James Douglas	M. E. 1	Fort Garrett
Garriott, James Polk	R. & H. E.	Albany
Gastineau, Lucile Adair	Arts 4	Middlesboro
Gay, Gatewood	Agr. 2	Lexington
Gayle, George William	M. E. 3	Flint, Michigan
Gayle, Hubbard Kavanaugh	Agr. 3	Frankfort
Gelder, John Thomas	M. E. 2	Rochester, N. Y.
Gentry, Charles Moore	Arts Sp.	Lexington

Gentry, Reuben Emmett	Agr. Sp.	Sonora
Gerhard, Otto Paul	Agr. 2	Latonia
Gholson, Herschel Tillman	Sh. Agr. 1	Kevil
Gibbs, Mary Louise	Unclassified	Lexington
Gilbert, James Freeman	Agr. 4	Lawrenceburg
Gilbert, Raymond Harlan	Sub-Fresh	Covington
Gillis, Inis	Sci. 4	Lexington
Ginn, Mrs. Mary Franklin	Agr. Sp.	Lexington
Ginochio, Francis Salvini	Agr. 1	Lexington
Glascock, Mary Lee	H. E. Sp.	Maysville
Glenn, William Mead	M. E. 1	Georgetown
Gold, Gordon Jouett	M. E. 2	Madisonville
Gooch, John Thomas	Arts 1	Hanson
Goodin, Albert B.	M. E. 1	Elizabethtown
Gordon, Angus Neal	Arts 3	Lexington
Gott, Edwin Joseph	Agr. 4	Bellevue
Gower, John Thomas	Mn. E. 3	Latonia
Grace, Herbert Hobson	M. E. 3	Gadsden, Ala.
Grady, Lester Winston	Arts 2	Sturgis
Gragg, Viola Evelyn	Arts 4	Somerset
Graham, Herbert Dade	Arts 1	Frankfort
Graham, Robert James	Agr. 4	Lexington
Grainger, Annabel	Arts 2	Paducah
Grasty, Harvey Louis	Sh. Agr. 1	Henderson
Green, George Douglas	Sh. Agr. 1	Munfordsville
Green, Joseph Wilson	Sh. Agr. 2	Taylorsville
Green, Logan Nourse	M. E. 1	Hopkinsville
Greene, Richard	Arts Sp.	Stamping Ground
Gregory, Hardin J.	Law 2	Mayfield
Gregory, John Corlin	Agr. 1	Owensboro
Gregory, Robert Loyd	C. E. 3	Harlan
Gregory, William Kerdrick	M. E. 4	Louisville
Griffey, Allen Carlisle	Sh. Agr. 1	Moscow
Griffey, Vester Roberts	10 Wks. Agr.	Moscow
Griffith, Helen Brookman	H. E. Sp.	Tucson, Arizona
Griggs, Clarence Carlisle	M. E. 2	Roberta
Gruell, Samuel Lewis	Law 2	Falmouth
Guilfoile, James Emmett	M. E. 1	Mt. Sterling
Gullion, Allen Wyant	Law 3	Lexington
Gunn, Esta Olivet	Arts 2	Lexington
Guye, Marthe	Arts Sp.	Lexington

Guy, Raymond Zebulon	Sub-Fresh	Lexington
Guyn, Leslie Lee	Law 3	Lexington
Haff, Frank Withrow	M. E. 2	Frankfort
Hagemeyer, Clifford Wiley	Arts 4	Butler
Haggard, William Wheeler	Agr. 2	Winchester
Halbert, William Carter	Sci. 4	Vanceburg
Hale, Philip Theodore	M. E. 1	Louisville
Haley, W. Carter	Arts Sp.	Lexington
Hall, Elmer Dennis	Sub-Fresh	Harlan
Hall, James Flanagan	M. E. 4	Frankfort
Hall, Joseph Leslie	C. E. 4	Waddy
Hamilton, Nora Ward	Agr. 1	Frankfort
Hamilton, Stanton E.	C. E. 1	Brooksville
Hamilton, Wallace Duncan	Law Sp.	Greenville
Hammonds, Lucius Madison	Arts 3	Mayfield
Hancock, Lillian Bryan	Arts 1	Brooksville
Hank, Pauline	Arts 3	Paducah
Hanks, Herbert Grayson	Law Sp.	Lexington
Hanley, Walter F.	Mn. E. 2	Maysville
Harbison, Anna Howard	H. E. Sp.	Lexington
Harbison, Lulie Shannon	Agr. 1	Shelbyville
Hardin, Eben Magoffin	M. E. 2	Harrodsburg
Hardin, Henry Townes	Law 3	Sebree
Hardwick, Ross Nisbet	M. E. 1	Dixon
Harp, Cecil Chenault	M. E. 3	Lexington
Harrel, F. Donald	M. E. 1	Trenton
Harris, Paul Fontaine, Jr.	Arts 1	Louisville
Harris, Thomas Field	M. E. 2	Versailles
Harrison, Elake	Arts 1	Middlesboro
Harris, William Jefferson	Sh. Agr. 1	Nolan, W. Va.
Harth, Joe Weaver	Sh. Agr. 1	Paducah
Hatter, John Albert	Agr. 3	Franklin
Hawkins, Robert Dawson	M. E. 3	Lexington
Hayden, Ellis Brown	M. E. 3	Paris
Haydon, Gretchen Marie	Arts Sp.	Lexington
Haynes, Thomas Francis	M. E. 2	Owensboro
Hays, Josie Lacie	Arts 1	Owensboro
Head, Walter	Arts 1	Jones
Heath, Robert Miller	Agr. 1	Bedford
Heaton, Elton	M. E. 1	Franklinton
Heaton, Ethel May	Arts 2	Middlesboro

Hedden, Thomas Clarke	Sci. 4	Finchville
Hedges, Henry Berkley	M. E. 3	Lexington
Heller, Elsie Beatrice	Arts 1	Paris
Heller, Frieda Maurie	Agr. 2	Paris
Helm, Logan Bullock	M. E. 1	Lexington
Henderson, John Howard	Arts 1	Wickliffe
Hendricks, Elijah Coleman	Sh. Agr. 1	Adairville
Henrich, Louis Joseph	Agr. 4	Newport
Henry, Winston Amey	Agr. 1	Frankfort
Herndon, John M., Jr.	Sh. Agr. 1	Owenton
Herrin, Allen Aldridge	R. & H. E.	Providence
Hervey, James Theodore	M. E. 1	Nicholasville
Hewlett, Coleman	Sci. 3	Livia
Heyman, Laurence Jerome	Sci. 1	Lexington
Hibberd, Willie Finly	10 Wks. Agr.	Muldraugh
Hickerson, William, Jr.	10 Wks. Agr.	Tullahoma, Tenn.
Hieatt, Martha Fox	Arts 1	Lexington
Higgins, Robert Donald	Sci. Sp.	Ashland
Hill, Mamie Lee	Arts 2	Fulton
Hill, Sophia Caldwell	Agr. 1	Somerset
Hite, Paul Emory	Law 3	Frankfort
Hobson, Willis Ewing	Mn. E. 4	Frankfort
Hodges, Annie Newell	Arts 2	Greensburg
Hodgkin, William Ogden	Mn. E. 2	Winchester
Hogg, Hiram	Law Sp.	Booneville
Hogrefe, John Henry	C. E. 1	Independence
Holbrook, John Owen	Sci. Sp.	Owensboro
Holbrook, McHenry	Arts 3	Hartford
Holladay, Lloyd Brown	Sh. Agr. 1	Winchester
Hollowell, Ludie Estella	Arts 2	Princeton
Holt, J. Thruxton Stanley	Agr. 1	Horse Cave
Hopkins, Christine	Arts 2	Louisville
Hoppe, Carl Theodore	Unclassified	Louisville
Hoskins, Charles Walter	Law Sp.	Hyden
House, Taylor Nathan	Law 3	Richmond
Howard, Joseph Hayden	M. E. 1	Mortonsville
Howard, Leah Kathleen	Arts Sp.	Russellville
Howard, Mary	Arts 1	Benton
Howard, Thomas Daugherty	M. E. 3	Lexington
Howe, Benjamin David	C. E. 1	Elizaville
Howe, Kenneth Plummer	M. E. 2	Elizaville

Howell, Stella Blanche.....Arts Sp.....Hodgenville
Huff, Aaron Baron.....M. E. 1.....Berea
Huff, Mary Frances.....Arts 3.....Roanoke, Va.
Hughes, Arthur Gladstone.....C. E. 1.....Newport
Hughes, Florence Brown.....Sci. 2.....Lexington
Hughes, Merritt McCauley.....M. E. 2.....Versailles
Huguelet, Guy Alexander.....Law Sp.....Charleston, S. C.
Hummel, Harold Rex.....Mn. E. 2.....Paducah
Humphreys, Edgar Arrington.....C. E. 4.....Crutchfield
Humphreys, Thomas David.....C. E. 1.....Paducah
Hundley, Harry Daniel.....C. E. 3.....Owensboro
Hundley, Robert Edward.....M. E. 1.....Owensboro
Hunt, Lee.....Arts 4.....Owensboro
Hunt, Maple.....Sub-Fresh.....Owensboro
Iler, Wayne Dickerson.....Sci. 1.....Covington
Ingels, Margaret.....M. E. 1.....Lexington
Ireland, Gatewood.....M. E. 2.....LaGrange
Irvine, James Farra.....M. E. 1.....Lexington
Jackson, Albert W.....Agr. 1.....Versailles
Jackson, John Thomas, Jr.....M. E. 2.....Lexington
Jackson, Stonewall.....Arts 3.....Arlington
Jake, Cecil Calvert.....Agr. 1.....Owensboro
Jakobe, Henry Joseph.....Mn. E. 3.....Covington
James, Ballard M.....Law Sp.....Prestonsburg
Jefferson, Carlyle.....M. E. 2.....Louisville
Jeffries, Guy Brooklyn.....C. E. 4.....Horse Cave
Jepson, Jesse James.....Sci. 1.....Franklin
Jett, Tanner Winston.....Law 4.....Owensboro
Jetton, Walter Cole.....Arts 4.....Sedalia
Johnson, Alfred Holbrook.....Arts 2.....Paintsville
Johnson, Arche Leonard.....Arts 1.....Tallega
Johnson, Clayborne Xenophon.....Sci. 4.....Tallega
Johnson, Edgar Engman.....M. E. 3.....Lexington
Johnson, Genevieve.....Sci. 2.....Linneus, Mo.
Johnson, John E. C.....Arts 4.....Tallega
Johnson, Mary Belle.....Arts 1.....Tallega
Johnston, William Clarkson.....Agr. 1.....Nicholasville
Jones, George Enoch.....Law 3.....Sturgis
Jones, James William.....Agr. 1.....Calvary City
Jones, Otto Jefferson.....Arts 2.....Sedalia
Jones, William Henry.....Law 2.....Hazel

Karsner, Albert Leonard	10 Wks. Agr.	Lexington
Kelly, George Edelen	M. E. 3	Lebanon
Kelley, Hugh	Law 4	Calhoun
Kelley, James Otis	Arts 2	Whitesville
Kelly, Ted Benjamin	Law Sp.	Great Bend, Kansas
Kennedy, Frank Hopkins	Agr. 2	Lexington
Kenney, Ralph	Unclassified	Centerville, Ohio
Kice, Hugh Miller	M. E. 1	O'Bannon
Kimbrough, Henry Clay, Jr.	Law Sp.	Lexington
Kimbrough, Nelson Lee	Law 2	Lexington
Kincaid, John Franklin	Unclassified	Ewing, Va.
King, Percy Franklin	Sh. Agr. 1	Fulton
Kirkpatrick, Oliver Wendell	Sci. 1	Greenville
Klauder, George Herman	Sh. Agr. 2	Henderson
Klauder, Katherine Elizabeth	H. E. Sp	Henderson
Knight, Russell Hendrix	Sh. Agr. 1	Louisville
Kohnhorst, Herbert A	Mn. E. Sp. †	Louisville
Kraemer, Albert John	Sci. 2	Louisville
Kumli, Charles Frank	Sci. 1	Middlesboro
Kunzman, John William	M. E. 4	Buechel
Kurozawa, Shimegoro	M. E. 4	Tokyo, Japan
Lafferty, Helen Ward	H. E. Sp.	Lexington
Lail, Webb	M. E. 2	Cynthiana
LaMaster, Joseph Paul	Agr. 4	Campbellsburg
Lambert, Elmer Lee	Arts 1	Lexington
Land, Robert Henry	Agr. 1	Hanly
Lane, William Muir	M. E. 4	Lexington
Lanham, Frank J.	Sh. Agr. 1	Springfield
Lanham, Susan Ann	Arts 2	Catlettsburg
Lassing, Charles Warren	10 Wks. Agr.	Frankfort
Lauer, Carl Emil	Sci. 3	Louisville
Lavercombe, Ray	C. E. 2	Newport
Layman, Robert Emmett	Sub-Fresh.	Spring Lick
Layton, Kilby Vance	10 Wks. Agr.	Hematite
Lee, Owen Scott	Sci. 2	Sadieville
Leibovitz, Alex. B.	Arts 1	Lewisport
Leibovitz, Mendle Brown	Mn. E. 1	Lewisport
Leonias, Leon	Unclassified	Van, Turkey
Lester, Hodge	Law 4	Cadiz
Lewis, Anna Egli	Arts 1	Franklin
Lewis, George Campbell	M. E. 4	London

Lewis, Marie Louise.....Arts Sp.....Greenburg
Lewis, Ollie L.....Sci. Sp.....Lexington
Ligon, John McGarvey.....Agr. 1.....North Middletown
Lindell, Thomas Leslie.....C. E. 1.....Louisville
Lindsay, John William.....Sub-Fresh.....Covington
Link, Edgar William.....M. E. 4.....Lexington
Link, LeRoy John.....Agr. 1.....Newport
Litsey, Henry Junius.....M. E. 2.....McAfee
Lloyd, Brilla May.....Agr. 3.....Lexington
Logan, Katherine McMurchy.....Arts 3.....Lexington
Logan, Lulie E.....Arts 3.....Lexington
London, Frances Anna.....Agr. 1.....Franklin
Lovelace, Harry Gordon.....Mn. E. 1.....Red Ash
Lovell, Charlie William.....C. E. 1.....Greenville
Lovely, Lucile.....M. E. Sp.....Lexington
Lowry, Ben H.....Sh. Agr. 1.....Catlettsburg
Lowry, Samuel J., Jr.....Agr. 2.....Oak Grove
Lowry, Tom White.....Law Sp.....Catlettsburg
Luckhoff, Vernon.....Unclassified
Pretoria, Transvaal, South Africa
Luther, Frank.....Sub-Fresh.....Ashland
Lutkemeier, Carolyn Frances.....Agr. 1.....Frankfort
Lyle, Josephine Irvine.....Unclassified.....Lexington
McAdams, William Henry.....Sci. 4.....Lexington
McArthur, Robert Gordon.....M. E. 1.....Glenview
McBrayer, Major Wesley.....Law 2.....Lawrenceburg
McCarty, Gambrell.....Agr. 1.....Owensboro
McCarty, Lida Scott.....Arts 4.....Owensboro
McCarty, William Luther, Jr.....Law 2.....Danville
McChesney, Ruth.....Arts 3.....Paducah
McClure, Eugene Thomas.....Agr. 1.....Gallup
McClure, Ollie Wathen.....Sci. Sp.....North Middletown
McConathy, Newton.....10 Wks. Agr.....Lexington
McConnell, James Hubbard.....M. E. 1.....Arlington
McCoy, Edward Malcolm.....Arts 2.....Lexington
McDaniel, Benjamin Clinton.....M. E. 2.....Lexington
McDonald, John Warlick.....Agr. 2.....Louisville
McGary, Charles E.....Sub-Fresh.....Kirk
McGregor, Harold Bowers.....Sub-Fresh.....Lexington
McGuffey, Earl Monroe.....Arts 1.....Barthell
McGuire, Frances Folsom.....Arts 3.....Mt. Vernon

McHendren, William	10 Wks. Agr.	Springfield
McInteer, Berthus Boston	Sh. Agr. 1	Rex
McKee, Walter Lindsay	Arts 1	Centerville, Miss.
McKee, William Houston	M. E. 3	London
McManama, Robert Lee	Unclassified	Calhoun
McMurtrey, Joseph Samuel	C. E. 1	Vine Grove
McNeill, Dee Lewis	Sub-Fresh	Hickman
McRoberts, John Milton	M. E. 1	Lancaster
McWilliams, George Dennis	Sh. Agr. 2	Lawrenceburg
Maclean, Robert Fitzhugh	C. E. 2	Lexington
Macloskey, Louis Wallace	Law 2	Collingswood, N. J.
Maddox, Walter Harris	10 Wks. Agr.	Kenton
Magruder, William Marion	Law Sp.	Lexington
Mahan, Thomas Elmer	Law 4	Williamsburg
Marking, Lorene Cathrine	Arts 4	Louisville
Marking, Mary Gertrude	Sub-Fresh	Louisville
Marks, Sarah Powell	H. E. Sp.	Lexington
Marks, Thomas Meriwether	Sci. Sp.	Lexington
Marsh, Henry Neal	Sci. 3	Maysville
Marsh, John Robert	Arts 1	Maysville
Martin, Benjamin Charles	Sh. Agr. 1	Greenville
Martin, Gomer R.	Agr. Sp.	Minnie
Martin, Lillian Annette	Agr. 1	Lexington
Martin, Mary Franklin	Arts 2	Fulton
Martin, Rufus Townes	Sh. Agr. 1	Greenville
Masner, John Wesley	Sci. 1	Lexington
Masner, Marguerite Christine	Arts 2	Lexington
Mason, Lillie Hempstead	H. E. Sp.	Louisville
Matthews, Raymond Innis	Agr. 4	Williamstown
Matthews, Sue Dorothy	Sci. 3	Lexington
Matti, Clara Elizabeth	Arts 3	Sturgis, Mich.
Mattingly, Cleveland Ira	Sh. Agr. 1	Versailles
Mattingly, Robert Emison	M. E. 4	Lebanon
Maupin, William Long	Agr. 1	Cook
May, Joseph McKinster	M. E. 2	Prestonsburg
Meade, Henry H.	Sh. Agr. 2	Ashland
Melear, Charles Herbert	Sh. Agr. 2	Lawrenceburg
Merritt, Alice Greenwood	Arts 2	Hopkinsville
Michot, Marie Louise	Arts 1	Louisville
Middleton, Irvin Bright	M. E. 2	Greenville
Middleton, James Adam	Arts 2	Greenville

Midkiff, Ivin Conrad	Sub-Fresh	Hartford
Miller, Harry Benjamin	Law 2	Lexington
Miller, Jesse I.	Law 3	Lexington
Milton, Roy Harlan	Agr. 4	Lexington
Milward, Anne Featherston	Agr. Sp.	Lexington
Mitchell, Jim Wardlaw	Sh. Agr. 2	Smith's Grove
Mitchell, Katherine	Agr. 1	Bowling Green
Mitchell, William C.	Sh. Agr. 1	Bremen
Monarch, Samuel Huston	Sub-Fresh.	Hardinsburg
Mooney, Edna Earle	Arts Sp.	Paducah
Moore, Alonza D.	Law Sp.	Lexington
Moore, Elizabeth Graeme	Agr. 2	Louisville
Moore, Erwin Wilson	M. E. 1	LaCenter
Moore, James Homer	Agr. 1	Marion
Moore, Thomas Wesley	Law Sp.	Jacksonville, Fla.
Morgan, Daniel Tennyson	M. E. 3	Elizabethtown
Morgan, Ralph Robert	Agr. 1	Covington
Morris, Walter Raymond	M. E. 3	Hawesville
Morrison, Henry Clay, Jr.	Law Sp.	Lexington
Morrison, Joseph, F. W.	Law 4	Lexington
Munson, Margaret	Agr. Sp.	Denison, Texas
Myers, Fred	C. E. 4	Glasgow
Mylor, Jesse Dean	M. E. 1	Lexington
Nash, Louis Gay	Sh. Agr. 1	Pisgah
Naylor, William Lon	C. E. 1	Hickman
Neagle, George Page	Agr. 1	Smith's Grove
Neagle, Walter Cleveland	Sub-Fresh.	Smith's Grove
Nelson, Lecoq Herc	Agr. 1	Somerset
Newland, Ernest Wolsey	Arts 2	Jackson
*Nichols, Richard McDowell	Agr. 2	Morgan
Nichols, Robert Lear	M. E. 1	Lexington
Nicoll, William Todd	Sci. 4	Lexington
Nicholson, Christopher Pitman	Arts 1	Grace
Nieding, James McGinnis	Law 2	Vermilion
Noe, James Cecil	Sub-Fresh.	Lexington
Noe, Sherod Stanfill	Sub-Fresh.	Lexington
Noel, Henry Louis	Mn. E. 3	Bellevue
Noel, William Henry	Mn. E. 2	Bellevue
Noland, Harris William	M. E. 2	Richmond
Nollau, Edgar Hugo	Sci. 3	St. Louis, Mo.

*Dead Nov. 17, 1912.

Nones, Lynn William	M. E. 2	Louisville
Norris, Robert Allen	Arts 3	Philpot
Norwood, Dorothy Johnson	H. E. Sp.	Lexington
Nuckols, Margaret Sanders	H. E. Sp.	Versailles
Nunan, Thomas Richard	M. E. 2	Winchester
O'Bannon, Lester Severance	M. E. 2	Stanford
O'Dell, James William	Arts 2	Lewisburg
Odor, Elbert Patterson	Sh. M. E.	Lexington
O'Hara, Ernest Warner	10 Wks. Agr.	Princeton
O'Neal, Younger Evans	Law Sp.	Olympia
O'Neill, Joseph Lawrence	Agr. 1	Lexington
Oney, Frances Hamilton	Arts 1	Lexington
O'Rear, James	Sh. Agr. 1	Frankfort
Osborne, Bernard Raymond	Law Sp.	Griffithsville, W. Va.
Osborn, Charles Henry Douglas	M. E. 4	Louisa
Otter, Grace	Agr. Sp.	Danville
Otto, Harry F.	M. E. 2	Maysville
Owen, Cline W.	Sci. 1	Mayfield
Owen, Jesse Lewis	Agr. 2	Owensboro
Palmer, Charles William	10 Wks. Agr.	Smith's Grove
Palmore, Hovey Duncan	C. E. 3	Persimon
Park, James	Arts 2	Richmond
Parker, Espie Clay	M. E. 2	Lexington
Parks, Oscar Oneal	Sub-Fresh.	Paint Lick
Parrigin, Homer Parks	M. E. 2	Mill Springs
Parrish, Roger Mills	C. E. 2	Scottsville
Parsons, Rhey Boyd	Arts 2	Mayfield
Patterson, Horace Smith, Jr.	10 Wks. Agr.	Lewisport
Payne, Ellen Douglas	Arts 1	Lexington
Payne, John Howard	Arts 2	Cold Spring
Payton, Leilon Early	Arts 1	Horse Cave
Peacock, Bess Reed	Unclassified	Lexington
Pearre, Thomas Leonard	C. E. 3	Clinton
Peck, John Richard	M. E. 2	Herndon
Peck, Myna M.	Arts 3	Lowes
Pedley, Gracean McGoodwin	Agr. 1	Owensboro
Peffer, Archie Xavier	Agr. 2	Somerset
Pence, Edgar Allen	Agr. 3	Lexington
Pence, Mary Belle	Arts 4	Lexington
Pence, Sallie Elizabeth	Arts 3	Lexington
Pendleton, Morris Eades	M. E. 1	Lexington

Penney, William Survant	C. E. 4	Lexington
Perry, Daniel Whitiker	M. E. 4	Pembroke
Petrie, Charles John	Agr. 2	Fairview
Petrie, John William	Arts 2	Louisville
Pettit, Sylvia Edna	Arts Sp.	Mt. Sterling
Pfanstiel, Robert	Sci. 3	Morning View
Pharis, Albert	10 Wks. Agr.	Lexington
Phelps, David McCord, Jr.	C. E. 1	Richmond
Philpot, Norbourn Edward	M. E. 2	Owensboro
Pierce, William Clarence	Sh. Agr. 2	Junction City
Piggott, Walter, J., Jr.	Agr. 2	Irvington
Pilcher, Nancy Fielding	Sci. 2	Lexington
Pinkerton, Julian Larabie	Arts 3	Versailles
Piper, Artemesia	Arts 1	Lexington
Pittman, Ernest Edgar	Agr. 2	Sedalia
Pogue, Robert Bedford	M. E. 4	Lexington
Pollitt, Dorothy Ellen	Arts 1	Vanceburg
Pollitt, Mabel Hardy	Arts 3	Vanceburg
Pollitt, Robina Clark	Arts Sp.	Vanceburg
Poole, Henry Lewis	Agr. 2	Greenville
Porter, Charles Carr	Sub-Fresh.	Shelbyville
Porter, Ella Kiziah	Arts 4	Lexington
Porter, John Wilson, Jr.	Sci. 4	Maysville
Porter, Hiram Cherry	10 Wks. Agr.	Lexington
Porter, Raymond E.	10 Wks. Agr.	Lexington
Porter, William F.	M. E. Sp.	Winchester
Portwood, Bradley	C. E. 1	Lexington
Potts, Floyd Wellman	Sub-Fresh.	Owensboro
Powell, Francis Marion	M. E. 1	Junction City
Powell, John Alexander	Agr. 1	Sebree
Powers, James Ellis	C. E. 2	Shelbyville
Powers, Mary Ragland	Arts 2	Shelbyville
Preston, Roscoe C.	Arts 4	Inez
Prewitt, Ed Marshall	Agr. Sp.	Lexington
Price, Sylvan Stewart	Sci. 4	Marion
Probst, Henry Samuel	M. E. 1	Abington
Proctor, Thomas Washington	Sh. Agr. 1	Winchester
Puckett, Roy Dee	M. E. 2	Hodgenville
Puckett, Showdy E.	Agr. 4	Hodgenville
Pulliam, Keel Gaines	M. E. 1	Lexington
Pumppelly, Mabel	Arts 1	Augusta

Pursley, Ernest Raymond	M. E. 1	Hopkinsville
Purtle, William Edward	C. E. 1	Monticello
Quisenberry, James Caperton	Sub-Fresh	Lexington
Ragan, Yandall	Arts 4	Cold Spring
Rainey, Charles Stephenson	M. E. 2	Mt. Sterling
Ramsey, Dexter Whittinghill	Law 3	Sebree
Randall, James Dwight	M. E. 1	Cloverport
Rankin, Arthur Jinks	C. E. 1	Rankin
Rawlings, Robert Willard	C. E. 1	Newport
Rawls, Burton H	Law Sp	Pelham, Ga.
Reed, James Arthur	C. E. 1	Brownsville
Rees, William Newton	C. E. 1	Cynthiana
Reid, Homer Lloyd	Arts 2	Lexington
Rembold, Elmer Louis	Sci. 4	Owensboro
Rettinger, Edgar Henry	Mn. E. Sp.	Golden Pond
Reynolds, J. Owen	Arts 1	Slaughterville
Rhoads, Crawford Carlysle	M. E. Sp.	Owensboro
Rhoads, Wayland	Agr. 2	Lexington
Rice, Gustavus Adolphus	Law 2	Harlan
Rich, Effie	Arts 1	Covington
Richards, Phil Everette	Agr. 1	Morganfield
Richardson, Clarence Hudson	Sci. 4	Buffalo
Richardson, Gilbert Coleman	Agr. 3	Kenton
Ridd, Stanley John	M. E. 4	Newport
Rider, Esther Lee	Arts 2	Rawletts
Rigdon, Thornton Frazee	Law Sp	Germantown
Riley, Bartlie Jasper	Sub-Fresh	Kuttawa
Ringo, Joseph Collis	Arts 1	Lexington
Ripy, Allen Roger	Sub-Fresh	Lawrenceburg
Ripy, William Richard	Sh. Agr. 1	Lawrenceburg
Roberts, Daniel Thomas	Arts 2	West Point
Roberts, Ivor Simpson	Arts 1	Springfield
Roberts, Llewellyn Donaldson	Arts 2	Springfield
Robertson, Allen C	Agr. 1	Augusta
Robinson, Jesse Gordon	Agr. 1	Winchester
Robinson, T. Curry	Law 2	Lancaster
Robinson, Thomas	Mn. E. 2	Middlesboro
Rodes, Mary McE	10 Wks. Agr.	Lexington
Rodes, Sarah Elizabeth	Arts 2	Lexington
Roemer, Joseph	Arts 2	Bowling Green
Roemer, Mrs. Louise	Arts Sp	Bowling Green

Rogers, George Clark	Mn. E. 2	Lexington
Rogers, Mary Ellen	Arts 1	Paducah
Rogers, William Henry	Agr. 4	Danville
Rollings, Charles Smith	C. E. 2	LaCenter
Roth, Abraham J	Agr. 2	Louisville
Roth, Bernard Wehle	Agr. 2	Louisville
Roth, Morris	C. E. 4	Newport
Rountree, Bert Thomas	Law 2	Smith's Grove
Routt, Seneca Claiborn	Agr. 3	Gee
Routt, William M	Agr. Sp	Gee
Rowe, Perry Arthur	C. E. 3	Bristol, Ind.
Rowe, Walter Ellsworth	Law 4	Lexington
Ruby, Charles Ernest	Agr. 1	Louisville
Rudd, William Charles	M. E. 4	Owensboro
Ruth, Nelle Elizabeth	H. E. Sp.	Poplar Bluff, Mo.
Sadler, Reuben Batson	Law 3	Lexington
Sallee, Philip Richard	Sub-Fresh	Keene
Sallee, William Merritt	Arts 1	Keene
Sandford, Robert Hunter	10 Wks. Agr.	Eminence
Sandford, W. J., Jr	Law 3	Covington
Sandmann, Leo Joseph	Arts 3	Louisville
Sartin, Basil Duke	Law Sp	Willow Shade
Scearce, Richard Ward	Agr. 1	Lebanon
Scherffius, Cleveland Hendricks	Sub-Fresh	Lynnville
Schilling, Frederick Adam	Agr. 1	Pittsfield, Mass.
Schlamp, Edward Arthur	M. E. 1	Henderson
Schleby, Anna	Arts Sp	Belfort, France
Schoberth, Raymond Anthony	Law 2	Versailles
Schoening, Henry Wolf	Agr. 3	Louisville
Schoensiegel, Albert David	Mn. E. 2	Bellevue
Schrader, Charles Christopher	M. E. 1	Philadelphia, Pa.
Schwartz, Clarence Horace	C. E. 3	Wickliffe
Schweers, Marguerite Elizabeth	Arts 2	Frankfort
Scott, Frances S	Arts 1	Lexington
Scott, George Atwill	C. E. 4	Lexington
Scott, Herschel	Agr. 2	Madisonville
Scott, J. Griff	M. E. 1	Nicholasville
Scott, J. L., Jr	M. E. 2	Lair
Scott, Roy Cunnungham	Law. Sp	Forks of Elkhorn
Scruggs, Hugh O	M. E. 2	Frankfort
Seltsam, Henry	R. & H. E.	Parksville

Settles, Grover Cleveland	Agr. 1	Lexington
Shaffer, Luella Morton	Arts 4	Ludlow
Shannon, Jane Arnold	Agr. 1	Shelbyville
Shaut, Guy Edward	Sci. 1	Ashland
Sheldon, Elsie Grace	Arts 3	Lexington
Shelman, George Edward	Unclassified	Union Star
Shelton, Herschel Reginald	M. E. 3	Clinton
Shinnick, William Cornelius	Arts 1	Shelbyville
Shoemaker, Clarence Barber	Sci. 2	Falmouth
Short, Adeline Downer	Arts 2	Pineville
Short, Thompson B	Law 2	Lexington
Shouse, Gilbert Berry	C. E. Sp.	Salt Lick
Shultz, Frederick Thomas	Arts 4	Narrows
Sievers, Amelia Beatrice	Arts Sp.	Waterloo
Skerritt, John Raymond	Sub-Fresh.	Hopkinsville
Skidmore, Robert Carlisle	Sub-Fresh.	Lexington
Sloan, Ada Elsie	Sci. 1	Lexington
Sloan, George Baniger	Sh. M. E.	Lexington
Sloan, Wessel Elbridge	Arts Sp.	Lexington
Smith, Charles Ball	Agr. 1	Henderson
Smith, Clay Luker	Sci. 1	Maysville
Smith, Edward Expedite	Law 3	Lexington
Smith, Ethelyn	Sub-Fresh.	Clintonville
Smith, George Rowe	Law 1	Central City
Smith, Glanton	M. E. Sp.	Ashland
Smith, Graham Allen	Agr. 3	Henderson
Smith, Isaac Christian	Sh. Agr. 1	Campbellsburg
Smith, James Bourbon	Sh. Agr. 1	Shelbyville
Smith, Lillian Pauline	Agr. 1	Middlesboro
Smith, Newell Pemberton	Arts Sp.	Henderson
Smith, Oliver Wolcott	Mn. E. 3	Covington
Smith, Rebecca Washington	Arts 1	Paducah
Smith, Robert Porter	Agr. 2	Maysville
Smith, Wallace Vanderpool	Agr. 4	Lexington
Smith, William Cameron	Agr. 3	Henderson
Snoddy, Amon Owsley	Sci. 4	Glasgow
Snodgrass, Erning Dennis	M. E. 2	Eminence
Snodgrass, Grace	Arts Sp.	Lexington
Sory, James, Jr.	Law 4	Madisonville
South, James Polk	Law 4	Jett
Sowards, Everett Hugh	Law 3	Pikeville

Speck, Elsie Margaret	Agr. 2	Paducah
Speevack, Samuel Isaac	C. E. 1	Louisville
Spencer, Carlisle	Law Sp.	Lexington
Spencer, Henry L.	Law 3	Lexington
Spencer, Sarah Brent	Agr. 1	Lexington
Spurlock, Chester	C. E. 1	Lombard
Spurries, John William	R. & H. E.	Owensboro
Stafford, Dailey Shearer	Law 4	Covina, Cal.
Stagg, Annie Barkley	Arts Sp.	Lexington
Stahel, Lisle Conrad	C. E. 2	Versailles
Stallard, Bradley	Sci. 1	Polly
Stallard, Harold Leighton	Sub-Fresh.	Louisville
Stamper, Anna Marie	Arts 1	Vanceburg
Staton, William Linn	Arts 2	Brooksville
Steele, Laura	Agr. 1	Lexington
Steffy, Raymond Earl	C. E. 3	Bicknell, Ind.
Stevens, Carrie W.	H. E. Sp.	Hartford
Stevenson, James McKinley	Sub-Fresh.	Bratton
Stevenson, Julia Farnsworth	Agr. 2	Lexington
Stivers, Edith Hurst	Arts 4	Paris
Stokes, Silas Johnson	Sub-Fresh.	Farmington
Stone, William Carl	C. E. 4	Hinton
Stratton, George Stanley	Sub-Fresh.	Bondville
Straub, Charles Edward	Mn. E. Sp.	Bellevue
Strong, Henry Glover	M. E. 3	Louisville
Sudduth, Watson Andrews	C. E. 4	Lexington
Sullivan, Kathleen Brennan	Agr. 1	White Hall
Sullivan, Mitchell S.	M. E. 1	Mt. Sterling
Summerhill, William Roderick	Agr. 1	Oak Grove
Sutton, Will D.	Sh. Agr. 1	Mayfield
Sweeny, Sunshine	10 Wks. Agr.	Lexington
Tackitt, Duran Keel	Law Sp.	Virgie
Taliaferro, Robert Ryland	M. E. 4	Lexington
Tartar, Elmer Ellsworth	Arts 4	Brady
Tartar, Gertrude	Arts 3	Somerset
Taylor, Claude Baker	Agr. 2	Augusta
Taylor, Clyde	Arts 2	Whitesville
Taylor, John Irwin	Sci. 1	Custer
Taylor, John Tee	Agr. 2	Cynthiana
Taylor, Mary Elizabeth	Agr. 4	Lexington
Taylor, Reuben Thornton	M. E. 2	Frankfort

Taylor, Robert Brooks	Sci. 2	Lexington
Taylor, Thomas Conway	M. E. 2	Greenville
Tempel, Henry Frederick	Arts 1	Paducah
Terrell, Mrs. L. M.	Arts Sp.	Lexington
Terry, Noah Norman	Agr. 1	Fulton
Terstegge, Harry Joseph	Agr. 1	Louisville
Thomas, Buren E.	10 Wks. Agr.	Oakland
Thomas, Conrad Tinsley	Sub-Fresh.	Linton
Thomas, Harry LeRoy	M. E. 2	Greenville
Thomas, Ray F.	Sh. Agr. 1	Cayce
Thomas, Richard Stokes	Agr. 1	Falmouth
Thomas, Roy Hilman	Arts 4	Cayce
Thomas, Roy Webster	M. E. 2	Georgetown
Thomas, William Kenney	M. E. 2	Muir
Thomason, Andrew Berkley	Law 4	Paris
Thompson, Howard Neal	M. E. Sp.	Richmond
Thompson, James William, Jr.	M. E. 1	Falmouth
Thompson, Layton	Law Sp.	Lexington
Thompson, Stanley Guffy	Sci. 1	Owensboro
Thornton, Roger Thomas	M. E. 3	Lexington
Threlkeld, Elmer Carter	Sh. Agr. 1	Owenton
Tiernan, Robert W	Sh. Agr. 2	Ashland
Toleman, Ethel Mae	Arts 1	Augusta
Tomkies, Frances Jordon	Sci. Sp.	Lexington
Townes, Fay Overton	Sci. Sp.	Madisonville
Townsend, Robert Presley	M. E. 3	Owensboro
Tucker, Ruby Jane	Agr. Sp.	Louisville
Turner, Carrie Eugenie	Agr. Sp.	Louisville
Turner, Idie Lee	Sci. 2	Lexington
Turner, William Karl	M. E. 3	Glasgow
Tutt, Emma May	Arts 1	Frankfort
Tuttle, Naomi Oldham	Arts 1	Winchester
Tuttle, William Preston	Agr. 2	Somerset
Upington, Theo E.	M. E. Sp.	Lexington
Utterback, John Milton	Sci. 1	Clinton
Utterback, Robert Elliott	M. E. 2	Frankfort
Van Arsdall, George Thomas	Sci. 3	Louisville
Van Arsdall, Julia Lashbrooke	Agr. Sp.	Flemingsburg
Van Deren, James Gordon	Sh. Agr. 1	Cynthiana
Venable, Mary Kinkead	Sci. 3	Pewee Valley
Vest, James Wesley	C. E. 2	Berry

Victor, Russell Norman ..... Arts 1 ..... Erlanger
Viley, Martha Payne ..... Agr. 1 ..... Paris
Vimont, Mary Elizabeth ..... Agr. 3 ..... Lexington
Waddy, Anne Elizabeth ..... Arts 3 ..... Lexington
Wagner, Henry O ..... M. E. 2 ..... Mayfield
Walker, Johnson ..... 10 Wks. Agr ..... Lexington
Walker, Orin Coomes ..... Sub-Fresh ..... Stithton
Wall, Joe Raymond ..... Agr. 3 ..... Cayce
Wallace, John Fleming ..... Agr. 3 ..... Louisville
Wallace, Roy Alexander ..... Agr. 2 ..... Cerulean
Waller, Adolph ..... Agr. 3 ..... Louisville
Walter, Edford Milton ..... M. E. 2 ..... Blaine
Warder, Evelyn Naomi ..... Arts 2 ..... Louisville
Warfield, William Christian ..... Sh. Agr. 1 ..... Pembroke
Warren, Irwin B ..... Sh. Agr. 1 ..... Louisville
Warwick, George Withrow ..... M. E. 2 ..... Frankfort
Wash, Fred Stanley ..... Arts 2 ..... Midway
Wasson, Owen ..... Arts Sp ..... Rhea Springs, Tenn.
Waters, Fred Brenning ..... Agr. 2 ..... Murray
Watkins, Caroline Taylor ..... Sci. 2 ..... Lexington
Watkins, George Clark ..... M. E. 4 ..... Lexington
Watkins, James Rufus ..... C. E. 2 ..... Greenville
Watkins, James Stephen ..... Mn. E. 1 ..... London
Watson, Claude Columbus ..... M. E. 2 ..... Georgetown
Watson, Lewis Patterson ..... Law 4 ..... Ashland
Watts, Henry Tyler ..... M. E. 3 ..... Louisville
Way, John H ..... Arts 4 ..... Utica
Weakley, Martha ..... Agr. 1 ..... Shelbyville
Webb, Will Isaac ..... Sub-Fresh ..... Webbville
Wegert, Arthur Eugene ..... Sci. 2 ..... Louisville
Weil, Gay David ..... 10 Wks. Agr ..... Lexington
Weisenberger, August Joseph ..... M. E. 4 ..... Midway
Weitzel, Augustus Edward ..... M. E. Sp. ..... Lexington
Wesley, Harold Howard ..... C. E. 1 ..... Ashland
Wesson, James Wright ..... Arts 2 ..... Wingo
Westcott, Lydia Elizabeth ..... Arts 3 ..... Lexington
Wheeler, Carl H ..... M. E. 1 ..... Beattyville
White, Elizabeth Elinor ..... Arts 2 ..... Louisville
White, Georgia Zola ..... Arts Sp ..... Blackford
White, Jennie May ..... Arts 3 ..... Louisville
White, Mina Frances ..... Sub-Fresh. Sp ..... Blackford

Whitehouse, James W.	Agr. 2	Taylorsville
Whitely, Fred	M. E. 1	Owensboro
Whitnell, Joe	Arts 2	Murray
Whitworth, Annie Lewis	Arts 1	Hardinsburg
Wickliffe, Thomas Paine	Arts 1	Wickliffe
Wicklund, Carl Anton	Sub-Fresh.	Central City
Wiley, Katharine Powell	Arts Sp.	Lexington
Wilkerson, Eugene Payne	Arts 1	Lexington
Willet, Orville Roberts	Arts 1	Elizabethtown
Williams, Charles Wilson	Law, 2	Jeffersonville, Ind.
Williams, Franklin P.	Agr. 1	Frankfort
Williams, Harry Croft	Law Sp.	Auburn
Williams, Herbert Chartrand	Arts 2	Owensboro
Williams, Howard Coleman	C. E. 1	Bedford
Williams, Marie Antoinette	Arts 4	Watertown, S. D.
Williams, Noel Morgan	M. E. 2	Russellville
Willis, Martha Stanton	Arts 1	Shelbyville
Willis, Robert Luther	M. E. 4	Crab Orchard
Willmott, Herbert Boone	M. E. 2	Finchville
Wills, Omar Robbins	Arts 1	Covington
Wilson, A. C.	Sh. Agr. 2	Bardstown
Wilson, Curtis Burnam	Arts 4	Paint Lick
Wilson, Charles Chester	Law 3	Canmer
Wilson, Cora Estelle	Arts Sp.	Lexington
Wilson, Grover Cleveland	Arts 1	Paint Lick
Wilson, John Estill	Arts 4	Paint Lick
Wilson, Mary Louise	Agr. Sp.	Versailles
Wilson, Thomas Gibson	Agr. 1	Covington
Wilson, Wade Alexander	Sub-Fresh.	Lynnville
Wilson, William Claude	Sci. 4	Providence
Winston, Wesley Lawrence	Arts 2	Sturgis
Wise, Edward, Jr.	C. E. 2	Lexington
Wolf, Julius	M. E. 1	Lexington
Wood, Natalie Massie	Arts 2	Maysville
Wood, Thomas Jackson	Arts 1	Wildie
Woodruff, Nata Lee	Arts 1	Eminence
Woods, Estill Dale	Sub-Fresh.	Pinckard
Woodson, Harry Netherland	Arts 3	Flat Lick
Woodson, Robert Marvin	Mn. E. 4	Kuttawa
Woodson, William Thomas	Arts 3	Flat Lick
Woodward, Corinne DeWitt	Arts 1	Hartford

Woody, Albert Parish.....M. E. Sp.....Cynthiana
Working, Robert Judson.....M. E. 2.....Canton, Ohio
Worsham, Herman.....M. E. 1.....Corbin
Worthington, Elmer Francis.....Law 3.....Lexington
Worthington, John Wilbur.....Agr. 2.....Owensboro
Wright, Floyd Holmes.....Sh. Agr. 1.....Liberty
Wright, Walter Franklin.....Arts 3.....Manchester
Yancey, Horace Philip.....C. E. 1.....Owenton
Yeager, Christine Elizabeth.....Arts 1.....Elizabethtown
Yeager, Ward Collis.....Law 3.....Warsaw
Yoe, Richard Rhodeham.....Sh. Agr. 1.....Louisville
Young, Alfred Combs.....Agr. 1.....Elic
Young, Bentley.....Mn. E. 1.....Louisville
Young, Charles Andrew.....R. & H. E.....Morganfield
Young, William T.....Law 3.....Guthrie
Zeederberg, Hane.....Unclassified,
Pretoria, Transvaal, South Africa
Zerfoss, Karl Peak.....Arts 1.....Ashland

SUMMER SCHOOL STUDENTS, 1912.

Anderson, Joseph Caldwell.....Lexington
Atkins, James William.....Lexington
Aulick, Beulad Elvira.....DeMossville
Barker, Harold Yancey.....Lexington
Barnes, Patrick Heaston.....Monticello
Barnett, Brinkley.....Somerset
Barrow, David, Jr.....Lexington
Barrow, John Parham.....Lexington
Barton, George.....Grays
Bell, Kenneth Corwin.....Robinson, Ill.
Bice, Forest Earl.....Clay
Birch, Robert.....Wilton
Blanchet, Louis P.....Glencoe
Bonnes, Fred. Abraham.....Roberts, Wis.
Bosley, Charles Leon.....R. R. 3, Owensboro
Bowden, Robert Douglas.....Sedalia
Brown, Eva Marguerite.....Lexington
Brown, Robert H.....Cadiz
Buchignani, Teresa Eugenia.....Lexington

Burton, Clyde O.....Bowling Green
Buskirk, Randolph.....Lexington
Butler, Samuel L.....Lexington
Byars, Robert S.....Lexington
Caldwell, J. A.....New Castle
Campbell, Joseph Birchel.....Barbourville
Caplinger, W. J.....La Grange
Carns, Whitelaw.....Elys
Casebier, Alvin.....Bevier
Cassidy, Laura.....Lexington
Castro, Antonio Ventura de Oliveira.....Lexington
Chrisman, George A.....Nicholasville
Clure, Raymond D.....Coalton
Cochran, Mary Brooking.....Louisville
Collins, Elizabeth.....Lexington
Cornelison, Ferol Mae.....Lexington
Covitz, Louis David.....Lexington
Cregor, N. Minton.....Springfield
Crowder, Margaret Lee.....Sinai
Cruickshank, Grace.....Lexington
Crucikshank, Olline Pierce.....Lexington
Cruickshank, Lucille Harrison.....Lexington
Culton, Thomas Bain.....Crab Orchard
Clutts, B. F.....Flat Lick
Dale, Charles Sherman.....Vanceburg
Davis, John W.....R. R. 3, Lexington
Dawson, Andrew Lewis.....Tuscaloosa, Ala.
Donovan, H. L.....Wickliffe
Dotson, Clifford T.....Olmstead
Downing, Irene Theodosia.....Lexington
Embry, Dorothy Hawkins.....Wilmore
Feltner, J. M.....London
Fisher, James Newman.....Versailles
Friel, Gaylord N.....Ashland
Gardner, Eldon E.....Drakesboro
Gelder, John Thomas.....Rochester, N. Y.
Gerhard, Otto Paul.....Covington
Gibson, H. T.....Wilmore
Gilbert, Oscar Greene.....Oconee, Ga.
Gilbert, Raymond Harlan.....Covington
Ginn, Mrs. Mary Franklin.....Lexington

Goodwin, Marietta E. ..... Lexington
Gott, Edwin Joseph ..... Lexington
Grace, Herbert Hobson ..... Gadsden, Ala.
Haggard, William Wheeler ..... Winchester
Halbert, William Carter ..... Vanceburg
Hall, Elmer Dennis ..... Harlan
Hall, James Flanagan ..... Frankfort
Hamilton, Nora Ward ..... Frankfort
Hammonds, Lucius Madison ..... Mayfield
Harlow, Frank E. ..... Gordonsville, Va.
Harvey, Katie ..... Versailles
Hawkins, Robert Dawson ..... Lexington
Hayden, Ellis Brown ..... Paris
Hedden, Thomas Clark ..... Finchville
Helton, John Colven ..... Bertha
Hite, Emma Marion ..... Nashville, Tenn.
Hodgkin, William Ogden ..... Winchester
Humfleet, D. M. ..... London
Hunt, Maple ..... Owensboro
Hurt, Lester E. ..... Auburn
Johns, James Benjamin ..... Scottsville
Johnston, Asbury ..... Oneida
Jones, George Enoch ..... Sturgis
Jones, James William ..... Calvert City
Jones, Otto Jefferson ..... Sedalia
Judd, Bessie F ..... R. R. 3, Lexington
Judd, Melvin H. ..... R. R. 3, Lexington
King, Effie ..... Lexington
Kincaid, John Franklin ..... Ewing, Va.
Kurozawa, Shima ..... Tokyo, Japan
Latimer, Walter I. ..... Dry Ridge
Leibovitz, Alexander ..... Lewisport
Lemon, Robert Clayton ..... Wheelersburg
Lloyd, Brilla May ..... Lexington
Lowry, Thomas M. ..... Lexington
Luten, Inez Ware ..... Hickman
Lyne, Sue Swigert ..... Lexington
McCann, Mamie ..... Flemingsburg
McClure, Eugene Thomas ..... Gallup
McCoy, Rufus ..... Cloverport
McGuire, Frances Folsom ..... Paris

McReynolds, Finis Ewing.....Murray
Mabrey, T. S.....Bevier
Marsh, Henry Neal.....Maysville
Maupin, William Long, Jr.....Lexington
May, Clarence Bascom.....Crooks
May, Helen Bowdry.....Lexington
Meece, Virgil Franklin.....Somerset
Mitchell, William Crowder.....Bremen
Moore, George M.....Corbin
Moore, Alonza Dunree.....Lexington
Mullins, William Tarlton.....Todd's Point
Murphy, John Thomas.....Crittenden
Myers, Fred.....Glasgow
Neagle, George Page.....Smith's Grove
Neely, Mary Caldwell.....Lexington
Nicholson, Christopher Pitman.....Grace
Noel, Henry L.....Bellevue
Nichols, Lee.....St. Charles
O'Hara, Mary Lena.....Princeton
Oldham, William Dowell.....Lexington
Palmore, Mary Lena.....Persimon
Palmore, Richard A.....Tompkinsville
Parks, Frank R.....Lexington
Parrigin, Homer Parks.....Springs
Payne, Ellen Douglas.....Lexington
Payne, John Howard.....Cold Spring
Pittman, Ernest Edgar.....Sedalia
Pollitt, Mabel Hardy.....Vanceburg
Porter, Charles Carr.....Shelbyville
Proctor, Edwin T.....Leitchfield
Pyatt, Charles Lynn.....Jacksonville, Ill.
Rackley, Gib.....Darisburg
Rainey, Charles Stephenson.....Mt. Sterling
Reid, Homer Lloyd.....Lexington
Reynolds, Jacob Omen.....Slaughterville
Richardson, Clarence Hudson.....Buffalo
Rider, Esther Lee.....Rowletts
Riley, Barthy Jasper.....Kuttawa
Riley, Mattie Collins.....Lexington
Rodes, Sarah Elizabeth.....R. R., Lexington
Rollings, Charles Smith.....LaCenter

Rudd, Basil Gordon.....Lexington
Ryan, Charles O.....Monticello
Schuler, Virgil Philip.....Montpelier, O.
Schwartz, Clarence Harold.....Wickliffe
Settles, Grover Cleveland.....Lexington
Shultz, Frederick Thomas.....Narrows
Skerritt, John Raymond.....Hopkinsville
Smith, George Rowe.....Central City
Spengler, E. T.....Lexington
Stallard, Bradley.....Pully
Steffy, Earl Raymond.....Bicknell, Ind.
Stivers, Rose Lee.....Lexington
Stone, William Carl.....Hinton
Taleiferro, Robert Ryland.....Lexington
Tanner, C. A.....Irvington
Taylor, John Tee.....Cynthiana
Turner, Idie Lee.....Lexington
Tye, Joshua.....Barbourville
Vahlsing, Lulu.....Crittenden
Vaughn, Esther.....Bagdad
Vest, James Wesley.....Berry
Wall, Franklin Pierce.....Cayce
Waters, Fred Breming.....Murray
Watkins, George Clark.....Lexington
Watson, Claude Columbus.....Georgetown
Webb, William Isaac.....Webbville
Wells, Mrs. Pearl.....Lexington
Wilkinson, Wallace Varnon.....Lexington
Wilson, John Estill.....Paint Lick
Wise, Edward, Jr.....Lexington
Wolf, G. H.....Lexington

SUMMARY.

COLLEGIATE	Arts and Science	Civ. Eng.	Mech. Eng.	Min. Eng.	Agriculture	Law	Total
Graduate Work	12	15	43	1	5	..	76
Seniors	46	12	22	4	14	18	116
Juniors	44	13	26	5	19	20	127
Sophomores	71	15	65	9	49	28	237
Freshmen	107	28	52	8	74	1	270
Totals	280	83	208	27	161	67	826

Collegiate Students		826
Special Students		138
Short Course in Agriculture		59
Ten Weeks' Course in Agriculture		25
Short Course in Mechanical Engineering		3
Rural and Highway Engineering		12
Ten Weeks' Course in Mining		11
Model School		48
Unclassified		17
		1,139
Summer School		176
		1, 315
Less Names Counted Twice		86
Total Enrollment		1, 229

LIST OF FACULTY.

Allen, John R.....417 Fayette Park
Allen, J. Embry.....365 Aylesford Place
Allen, Robert McDowell.....421 W. Third Street
Anderson, Frederick Paul.....147 Kentucky Avenue
Averitt, Saxe Dabney.....304 East Maxwell
Barker, Henry Stites.....Patterson Hall
Barr, Thomas James.....321 Rose Street
Bates, Edgar Fleming.....250 South Limestone
Baxter, Jesse Vernon.....367 Oldham Avenue
Bohannon, Charles D.....413 Aylesford Place
Boyd, Paul Prentice.....326 Harrison Avenue
Brown, Linwood Arnold.....425 Transylvania Park
Bryant, Thomson Ripley.....152 East High
Buckman, Miss Ruby.....239 South Limestone
Buckner, Garrett Davis.....165 Market
Bush, James Richard.....248 Ashland Avenue
Butt, William E.....413 Aylesford Place
Callaway, Lawrence Arthur.....333 South Upper St.
Carmody, John Henry.....414 Aylesford Place
Carrel, William Joseph.....371 Linden Walk
Chalkley, Lyman.....Preston Inn
Chinn, Miss Aubyn.....Arts Club, W. Second
Chorn, Miss Sarah.....Nicholasville Pike
Claybrook, John Irvin.....Springfield, Ky.
Corbett, Lamert Seymour.....289 South Limestone
Curtis, Henry Ernest.....355 Linden Walk
Curtis, James Stewart.....136 East Maxwell
Daniels, Lloyd Cadie.....270 South Limestone
Dantzler, Lehre Livingston.....136 East Maxwell
Davis, Joseph Morton.....340 Madison Place
Dicker, John Born.....174 Virginia Avenue
Dicker, Joseph.....169 Virginia Avenue
Didlake, Miss Mary LeGrand.....481 East Main
Dissinger, Earl.....101 East High
Downing, Harold Hardesty.....158 North Ashland
Duncan, James Ray.....Sixth Street
Easton, Harry Draper.....430 Transylvania Park
Ewan, Avery Early.....315 East Maxwell
Farra, James A.....The Waverly, Hampton Court

Farquhar, Edward Franklin.....Sayre Avenue
Frankel, Leon Kaufman.....324 Aylesford Place
Freeman, William Edwin.....239 South Limestone
Garman, Harrison.....638 South Limestone
Gilbert, Alfred Holley.....609 South Limestone
Gillis, Ezra L.....287 South Limestone
Good, Edwin Stanton.....Experiment Station Farm
Graham, Robert.....152 East High
Gullion, Allen Wyant.....University Campus
Hamilton, Anna Jackson.....Patterson Hall
Healy, Daniel Joseph.....530 Sayre Avenue
Hendrick, Herbert Bradley.....414 Aylesford Place
Hooper, John Julian.....609 South Limestone
Horine, John Sherman.....239 South Limestone
Ingram, Elmer.....Lexington
Jamison, Knox.....410 Rose Lane
Jewett, Howard Herman.....153 Church Street
Jones, Roger Walter.....336 Madison Place
Jones, Theodore Tolman.....119 Washington Avenue
Jones, Sadocie Cannelle.....327 South Upper
Kastle, Joseph Hoeing.....238 East Maxwell
Kenney, Ralph.....372 South Upper
Kerr, Charles.....658 North Broadway
Killebrew, Cincinnatus Decatur.....287 South Limestone
Kinney, Edmund J.....465 Woodland Avenue
Knapp, Rudolf Ernst.....609 South Limestone
LaBach, James Oscar.....Preston Inn, Second and Jefferson
Lafferty, William Thornton.....418 East Maxwell
Lowry, Miss Helen B.....258 Market Street
Mackenzie, Alexander St. Clair.....463 West Sixth
Mastin, James Edward.....628 South Limestone
Mathews, Clarence Wentworth.....660 South Limestone
*Matthews, William C.....Lexington
Maxson, Ralph Nelson.....366 Transylvania Park
Melcher, Columbus Rudolph.....Hanover Flats, Hampton Court
Miller, Arthur McQuiston.....609 South Limestone
McCann, Miss Sue Dobyns.....224 East High
McElyea, Lewis Wesley.....289 South Limestone
McHargue, James Spencer.....312 South Upper
McFarland, Frank Theodore.....327 South Upper

*On leave of absence.

McFarlin, John William.....Franklin, Kentucky
Mueller, Floyd Center.....109 Woodland Avenue
Nicholls, William Durrett.....327 South Upper
Niswonger, Holly Ray.....153 Church Street
Noe, James Thomas Cotton.....321 Linden Walk
Nollau, Louis Edward.....412 Woodland Avenue
Norwood, Charles Joseph.....339 Aylesford Place
Nutter, John William.....149 Virginia Avenue
Ott, Thomas Forman.....138 North Upper
Pence, Merry Lewis.....364 Merino Street
Peter, Alfred Meredith.....268 East Maxwell
Petty, Luther Ewing.....412 Rose Street
Pinnell, Walter Redmon.....437 W. Second
Pontius, Robert Loring.....289 South Limestone
Porter, Chilton Scott.....430 East Maxwell
Pryor, Joseph William.....261 North Broadway
Reed, Alvin J.....339 Park Avenue
*Rees, Elijah Latham.....726 East Main
Rhoads, McHenry.....Nicholasville Pike
Roberts, George.....340 Transylvania Park
Rodes, William.....152 East High
Routt, Grover Cleveland.....224 East High
Rowe, Walter Ellsworth.....347 Transylvania Park
Savage, Percy Godfrey.....363 Transylvania Park
Scherffius, Benjamin Franklin.....227 East Maxwell
Scheppleman, Walter.....429 Transylvania Park
Schnaitter, Marion Rexford.....390 South Upper
Shedd, Oliver March.....348 Linden Walk
Spahr, Robert Hoover.....390 South Upper
Spears, Howell Davis.....703 Rose Street
Stoll, Richard C.....444 West Third
Stout, Mrs. Robert.....Versailles, Kentucky
Straus, Henry Harrison.....609 South Limestone
Surface, Frank Macy.....634 Loudon Avenue
Sweeny, Miss Mary E.....Hagerman Apartment, 431 W. Second Street
Sweetland, Edwin Regur.....236 Rodes Avenue
*Terrell, Glanville.....609 South Limestone
Terrell, Daniel Voiers.....287 South Limestone
*Terrell, Robert Craig.....Frankfort, Kentucky
Terrell, Willis Granville.....Lexington

*On leave of absence.

Thurman, Gordon.....131 Virginia Avenue
Tigert, John James.....320 East Maxwell
Turner, Job Darbin.....135 Washington Avenue
Tuthill, James Edward.....253 South Limestone
Tuttle, Franklin Elliot.....125 East Maxwell
Vaughn, Erle Cleveland.....304 South Limestone
Vaughn, George W.....111 North Ashland
Weaver, Charles Preston.....149 Washington Avenue
Webb, William Snyder.....363 Transylvania Park
White, James Garrard.....158 East Maxwell
Wilhoit, Arza Lytle.....312 South Upper
Wilson, Benjamin Dunbar.....Versailles Pike, R. R. 2
Wilson, Samuel M.....435 Fayette Park
Worthington, Elmer Francis.....224 East High
Zembrod, Alfred Charles.....456 West Fourth

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