The State University

Lexington, Kentucky

JAMES K. PATTERSON, Ph. D., LL. D., F. S. A., President

Vol. 1 MARCH, 1909 No. 1

BULLETIN

OF THE

SUMMER SESSION

I. COLLEGE OF ARTS AND SCIENCE

1. Preparatory Courses
2. Education
3. Mathematics and Astronomy
4. Language and History
5. Physics
6. Chemistry
7. Anatomy and Physiology
8. Zoology and Geology
9. Botany and Agriculture
10. Domestic Science

ENGINEERING COLLEGES

II. Civil

III. Mechanical and Electrical

IV. Mining

V. COLLEGE OF LAW

Entered at the Post-office at Lexington, Kentucky, as second-class matter, under Act of Congress, July 16, 1894

GENERAL INFORMATION

The Organization of the University includes: the Colleges of Agriculture, of Arts and Science, of Law, of Civil Engineering, of Mechanical and Electrical Engineering, and of Mining Engineering. All these offer work during the Summer Session.

Location and Grounds.—The University is located in the southern part of the city of Lexington. The site is elevated and commands a good view of much of the city and of the surrounding country. The campus consists of fifty-two arces of land laid out in walks, drives, and lawns, and planted with a choice variety of trees and shrubs. 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.

Buildings.—The fifteen buildings are constructed of stone and brick and are large, well planned, and well equipped for the various purposes for which they were built. They are the Administration Building, Chemical Building, Mechanical Hall, Science Hall, Education Building, Agricultural Hall, Physics and Civil Engineering Building, Gymnasium, Library, Experiment Station, Mining Building, Observatory, two dormitories on the campus, and Patterson Hall, the residence of the women students, within a quarter of a mile of the University.

Cost of Living.—The rooms of the dormitories are free of rent to all students of the Summer Session. Those expecting to use these rooms should provide themselves with the necessary bed linen and such cover as they may need. Men also furnish their own mattresses and pay a small fee for janitor service. Table board may be had at from two to three and a half dollars a week. Young women expecting to board at Patterson Hall should notify Mrs. Wallis in advance.

Business Statement.—Students desiring work peculiar to the College of Law, of Civil Engineering, of Mechanical and Electrical Engineering, or of Mining Engineering, should register and pay the fees as given in the respective announcements which follow.

Students desiring any of the work embraced under the head of the College of Arts and Science, will register and pay their fees to the Registrar in Education Building. There they will be given a card to the professor whose class they desire to enter, stating that they have registered and settled their fees. No student will be admitted to any class until his fees have been settled. The fee for tuition is usually ten dollars for a term's work in any subject. When the student desires to take as many as three subjects, a reduction is made and a single fee of

twenty-five dollars is charged. No student is expected to take more than three subjects, and only in exceptional cases will it be permitted. A student paying a fee of $25 may select his subjects in any of the Colleges of the University.

The giving of some of the following courses is conditioned on the number of students enrolled. Those desiring such work must register and pay their fees before June 1st, 1909. If then a sufficient number have registered, they will be notified, and if not, their money will be promptly refunded. It is highly desirable that as many as possible should register thus early, even if the work is not conditional.

For further information address either the Professor in charge of the work desired, or

J. Morton Davis,
340 Madison Place, Lexington, Ky.
Fayette Telephone { Business 1098. Home 1483.

DEPARTMENT OF EDUCATION.

The establishment of High Schools in all of the counties of the State is creating a demand for better equipped secondary teachers. The State University offers courses this summer intended primarily to give just the instruction that will best fit teachers for these high school positions. In connection with the academic work of the various departments of the University, the Department of Education offers the following courses conditioned on the number who apply for this work:

Psychology.

Methodology.

History of Education.

Philosophy of Education.

An experienced and competent instructor will be in charge of this work.

COLLEGE OF ARTS AND SCIENCE

JUNE 7th—JULY 30th.

The Summer Session of the College of Arts and Science embraces all the courses herein offered in Language, History, Mathematics, Astronomy, Physics, Chemistry, Zoology, Geology, Physiology, Botany and Agriculture, and courses preparatory to these.

Kentucky is calling for better things along educational lines and with this call comes a demand for more high schools and better ones. This means an increased and insistent demand for better prepared teachers—teachers who know more of a given subject than they expect to teach.

The University, realizing the need, has, at considerable sacrifice, made this effort to meet it, feeling confident that the thoughtful, progressive teacher, whether in the Common School, High School, Academy or College, will be glad to take advantage of the opportunity.

OBJECT OF THE SUMMER SESSION.

1. To furnish the teachers of Kentucky an opportunity to fit themselves better for their work.
2. To help students remove any condition they may have from the preceding years' work.
3. To advance students who desire to finish their course in a shorter time than that prescribed, or who may desire to take additional work.
4. To give students, expecting to enter the Freshman Class in September, an opportunity to make up any units of credit they may lack, or to obtain advanced credit at entrance.
5. To instruct students desiring to enter any of the classes of the Academy. Many students might enter a year higher by spending eight weeks of the summer here.

PREPARATORY.

The Preparatory Courses cover the full work of the Academy, and offer an excellent opportunity for students to advance themselves or to make up deficiencies. The attention of students desiring to enter the Freshman Class is called to the fact that Solid Geometry, one year of Physics, and two years of some Foreign Language are required for entrance to the Freshman Class in any department of the University. This work will be under the direction of Assistant Professors Davis and Jones.

MATHEMATICS AND ASTRONOMY.

J. Morton Davis, Assistant Professor of Mathematics.

The courses planned are in the main identical with those offered during the regular session.

I. Plane Trigonometry.—This is readily done in one term by a well prepared student. Murray's Plane Trigonometry is used.

II. Spherical Trigonometry.—This is required for Civil Engineering students and is necessary in order to take an advanced course in Astronomy.

III. College Algebra.—Fine's College Algebra is made the basis of this course. The subject is reviewed from the beginning and is treated in a more scientific manner than is usual. This course would be of great benefit to teachers.

IV. Analytical Geometry.—This subject takes an entire year. Not more than half the subject can be covered by beginners in one summer. It is generally considered three terms' work.

V. Calculus.—This is a year's work. It will be divided into three parts and a student in the Summer Session may take any part for which he is prepared. Text-book, Granville's Differential and Integral Calculus.

VI. Graphic Algebra and Determinants or Theory of Equations.—Either of the two courses may be taken by properly prepared students. They are given by lecture.

VII. Advanced Calculus or Differential Equations.—A prerequisite for taking either of these is a good knowledge of the subjects of the preceding courses.

VIII. Astronomy.—The course offered will be of a somewhat elementary character. A general view of the subject will be given by text-book and lecture and by the frequent use of an 18-inch celestial globe. Class-room work will be supplemented by the identification of the principal constellations and by the use of the 8-inch refracting telescope in the observatory.

LANGUAGE AND HISTORY.

T. T. Jones, Assistant Professor of Latin and Greek.

I. Latin and Greek.—While the prescribed course of the regular session is made the basis of the work in the Summer School, pains will be taken to arrange special work for students desiring it.

A feature of the work this summer will be the study of the private life of the Romans. Students reading the various authors, Livy, Virgil, Horace, etc., will take careful note of every word or phrase bearing in any way upon the private life of the people. These statements will be discussed and explained during the recitation. Our plan is to make a systematic collection of this information, arranging it under different headings—the Roman house, their dress, occupations, amusements, etc. At the same time a considerable amount of supplementary reading will be assigned. It is hoped that this work may be profitable and at the same time a source of pleasure to the students engaged in it.

II. ENGLISH AND HISTORY.—While the Professors of English and History will not teach in the Summer School, they are satisfied with those in charge and authorize them to offer any of the work of the regular courses, provided that those who are required to take only one year's work in English may not do more than two terms' work during the summer.

MODERN LANGUAGES.

C. R. Melcher, Associate Professor of French and German.

The courses offered in Modern Languages 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.

GERMAN.

First Course.—Bierwirth's Beginning Grammar, followed by Glueck Auf, Mueller and Wenckeback.

Second Course.—Bierwirth's Elements of German, followed by such intermediate German as Storm's Immensee; Hillern's Hoeher als die Kirche, or Eichendorff's Aus dem Leben eines Taugenichts.

Third Course.—The work will be selected from such standard authors as Schiller, Goethe, Lassing, etc., etc.

FRENCH.

First Course.—Fraser and Squair's French Grammar, followed by light reading.

Second Course.—Selections to suit the wants of the class.

COURSES IN PHYSICS

JUNE 7th—JULY 16th.

Professor M. L. Pence.

I. A Course in Elementary Physics.—The work of this course is that which is required for admission to the Freshman Class of the University. Gage's Elements of Physics will be completed.

II. A Course in Theoretical Physics.—This course is equivalent to the Freshman Engineering, or Sophomore Scientific, work in the University. It embraces General Physical Phenomena, Mechanics, Sound, Heat, Light, Electricity and Magnetism. The work of these two courses will be fully illustrated by lectures and experiments with daily recitations.

Since this department expects to move into its new quarters during the coming summer, no laboratory work is offered for this session.

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.

The fee for each course will be $10.

COURSE IN ADVANCED PHYSIOLOGY

Dr. Joseph W. Pryor.

A class in advanced Physiology will be organized under the supervision of the head of this department. The course will consist of lectures, demonstrations and laboratory exercises.

The course includes instruction in Anatomy, Physiology, Histology and Hygiene as found in Martin's The Human Body, Advanced Course. The following subjects will be taken up: General Structure and Composition; Cells and Cell Growth; The Skeleton; Organs of Circulation; the Blood and Circulation of the Blood: the Organs of Digestion, Respiration, Secretion and Excretion and the Essential Facts of Digestion, Secretion, Excretion, Absorption, Circulation, Respiration, etc.; the Nervous System and the Special Senses.

This course is intended to prepare persons who expect to teach in the public schools.

Full credit in the regular University courses will be given for work done during the Summer Term.

The fee for the course will be $10.00 (ten dollars).

COURSES IN CHEMISTRY

Harry Essex, Assistant in Chemistry.

The following courses in Chemistry are offered for the Summer Session of 1909:

ELEMENTARY CHEMISTRY, INORGANIC.

I. The descriptive chemistry of the non-metals and metals will be studied together with the fundamental laws of the science. Instruction will be given by means of lectures and recitations. One hour daily.

II. The descriptive chemistry of the metals will be studied by means of lectures and recitations. One hour daily.

III. The characteristic reactions of the metals and non-metals with special reference to their analytical applications, will be studied in the laboratory. Two hours daily.

IV. QUALITATIVE CHEMICAL ANALYSIS.—The identification of both positive and negative ions will be studied and systematic qualitative examination made of salts, alloys and industrial products. Three hours daily.

V. GAS ANALYSIS.—The typical methods for the analysis of gases and their practical applications will be studied in the laboratory.

VI. QUANTITATIVE ANALYSIS.—Laboratory in Quantitative Analysis including determinations by gravimetric and volumetric methods. Two hours daily.

VII. Theoretical study of the compounds of carbon.

GENERAL STATEMENT.

The work of Courses I, II and III are especially adapted to those who wish to prepare themselves for elementary chemical instruction.

Regular college students having conditions in these subjects have an opportunity to repeat the work in preparation for the removal of their conditions.

Five students is the minimum number for whom Courses I and II will be given.

EXPENSES.—A fee of $10.00 (ten dollars), payable in *advance,* will be charged for any course described above.

A deposit of $5.00 (five dollars), to cover the cost of breakage, will be required for all laboratory courses.

COURSES IN ZOOLOGY AND GEOLOGY

Sue D. McCann.

I. General Zoology.—Lectures, laboratory and field work. Lectures will treat of the systematic position, habits and development of animals. Laboratory periods will be devoted to the study of the form and structure of invertebrates and will involve an extensive use of the compound microscope. Some practice will be given in the determination of species and in the preparation of tissues as permanent mounts for microscopical study. Field work will be devoted to the study of the fauna about Lexington. The course is equivalent to the course in Invertebrate Zoology given in the University. Three two-hour periods per week.

II. General Entomology, Entomotaxy.—Lectures on the characteristics of the orders, sub-orders and important families of insects accompanied by field work. Much time will be spent in familiarizing the student with the more important injurious insects and with the methods of combating them.

In Entomotaxy, practice will be given in collecting insects and in preparing them for the cabinet. Two two-hour periods per week.

III. General Geology.—If there is sufficient demand for it, a course will be offered in General Geology. While Professor Miller cannot be present all the time, he will see that the work is in competent hands, and will give a series of lectures to the class.

Eight students is the minimum number for which these courses will be offered, and persons wishing to pursue any of them should communicate with the department before June 1.

A fee of $10.00 (ten dollars) each, payable in advance, will be charged for Courses I, II and III.

A deposit of $5.00 (five dollars), to cover cost of any breakage, will be required for each laboratory.

BOTANY AND ELEMENTARY AGRICULTURE

Botany—Professor Clarence W. Mathews and Assistant.
Agriculture—Professor J. J. Hooper.

I. Elementary Botany.—Comprises the study of the structure and physiology of the seed plants, and is conducted mainly upon the laboratory plan of study. The plant laboratories of the College of Agriculture are abundantly supplied with microscopes and various forms of physiological and other apparatus. Nine laboratory hours per week, by appointment.

II. The Morphology and Classification of the Lower Plants.—Begins with a preliminary study of the compound microscope and its uses, and comprises a general survey of the morphology and classification of the Thallophytes, Bryophytes, and Pteridophytes. Nine laboratory hours per week.

III. Plant Histology.—Is designed to give instruction and training in the various methods of preparing vegetable tissues for microscopic study, accompanied by a systematic study of the various plant tissues thus prepared. The advanced laboratory for this purpose is equipped with ovens, microtomes and all other necessary apparatus for conducting this work in an effective manner. Nine laboratory hours per week.

IV. Principles of Plant Culture.—Includes a study of the fundamental activities of plant life, with special reference to the flower and vegetable garden and the orchard; the influences of normal and abnormal temperature, the proper supply of water, light, food, etc.; the effect of insect and plant parasites and other conditions. Further study is made of such practical details as propagation, seed selection, seed sowing, transplanting, pruning, spraying, etc. Lectures and practical exercises. Six hours per week.

V. Elements of Agriculture.—The course presents a study of soils and fertilizers, the crops of the farm, and live-stock judging, feeding and management. The subject of dairying is discussed from the point of milk production and butter making. Lectures and practical exercises. Six hours per week.

Six is the minimum number of students for which any of the above courses will be offered.

The fee for any one course will be $10.00 (ten dollars).

A laboratory deposit of $5.00 (five dollars), to cover cost of possible breakage, etc., will be required in botany.

EXPERIMENT STATION

LIBRARY

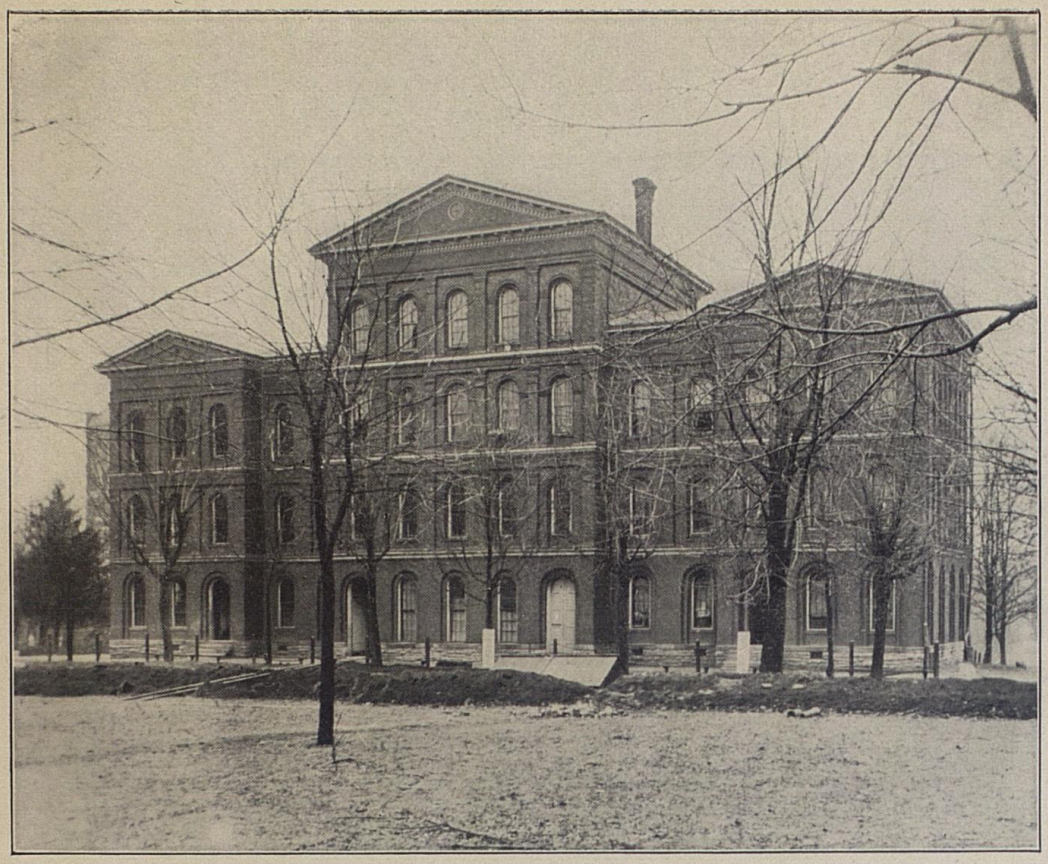
EDUCATION BUILDING

NEW DORMITORY

CENTRAL GROUP OF BUILDINGS (Front view)

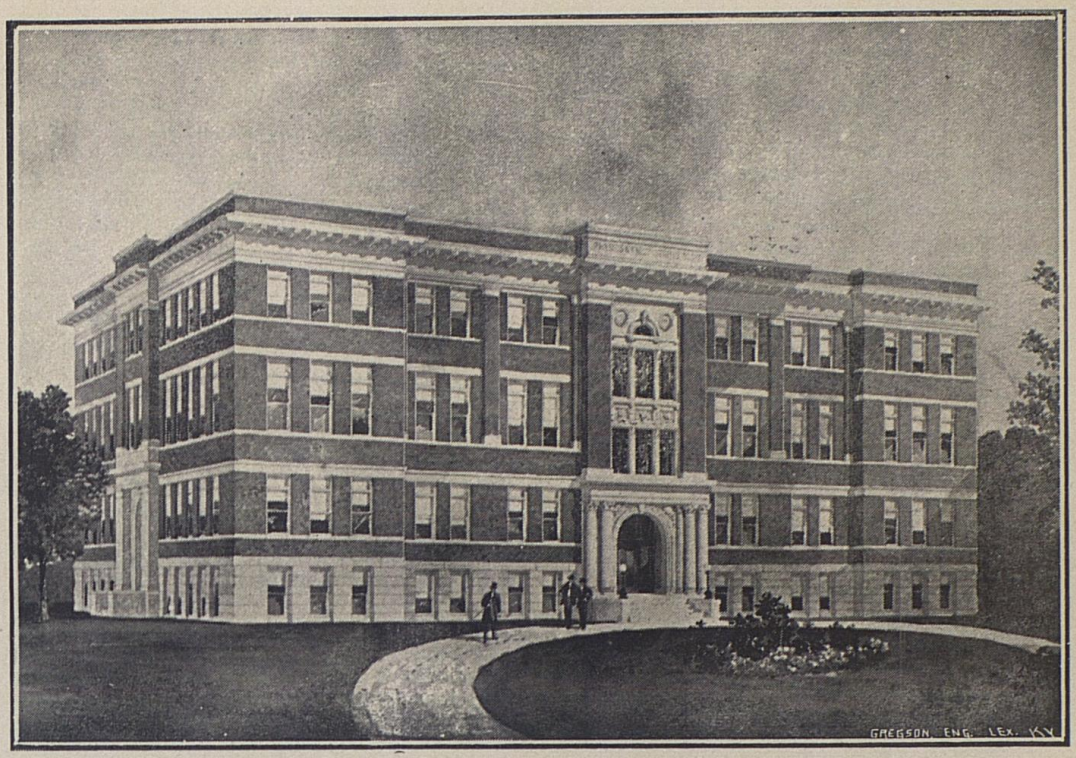
SCIENCE HALL

ADMINISTRATION BUILDING



OLD DORMITORY

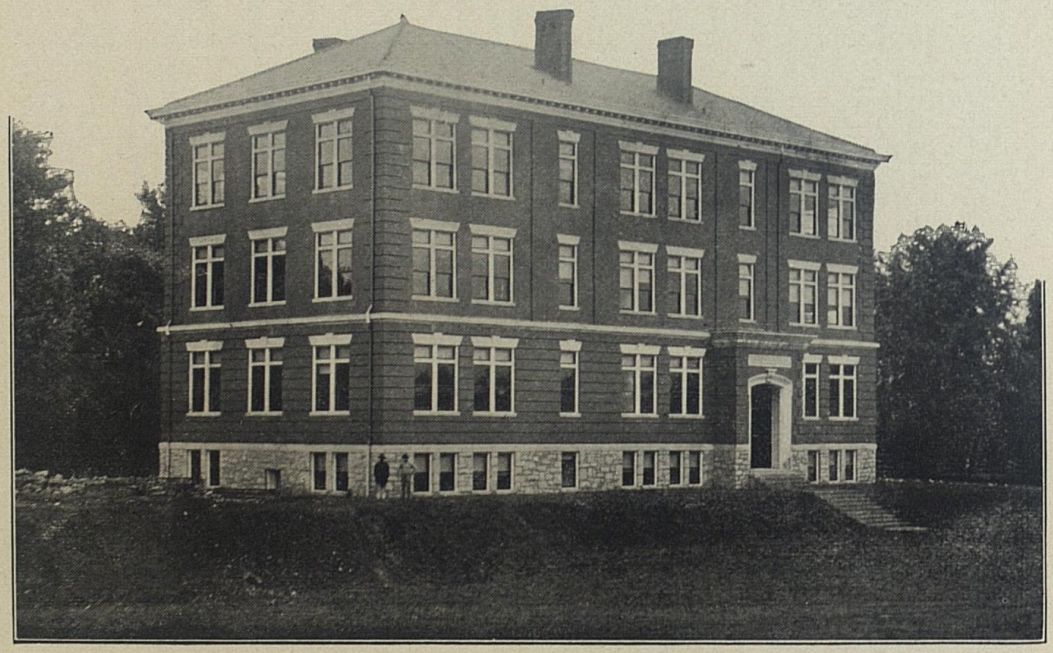
PATTERSON HALL



PHYSICS AND CIVIL ENGINEERING BUILDING

MECHANICAL HALL

CHEMISTRY BUILDING



MINING LABORATORY

DOMESTIC SCIENCE

Isabella West Marshall.

The following courses in Domestic Science are offered to students of the Summer Session.

The courses are designed to meet the needs of teachers who desire to acquire a knowledge of the subject sufficient to teach in elementary schools under the direction of a Supervisor of Domestic Science.

It may also be taken as an introduction to the subject by students who wish to continue the course either during the regular University session or during a future Summer Session.

The department is thoroughly equipped for a proper presentation of the subject.

Besides a lecture room, there is a large, cool laboratory, fitted up with individual gas burners, cooking apparatus and all the conveniences of modern sanitary plumbing.

Classes will be held during the cool morning hours.

Laboratory period, 1½ hours. Lecture period, ½ hour.

COURSES.

1. Practical Cookery, including discussion of foods belonging to the following classes:

(a) Heat-giving and energy-supplying foods: Cereals, bread, potatoes, etc.

(b) Tissue-forming foods: Meat, milk, eggs, fish, etc.

(c) Foods containing excess of mineral salts: Fruits, vegetables, including salads.

(d) Sugars—candy.

(e) Beverages: Tea, coffee, chilled non-alcoholic beverages.

(f) Special diets.

(g) Ices and gelatine mixtures.

2. Lectures upon Food Production and Manufacture.

(a) Consideration of Nature, Nutritive Constituents and Relative Value of Foods.

(b) Amount of Food Required in Health and Influence of Various Conditions Upon Amount of Food Required.

(c) Consideration of Different Kinds of Food, together with percentages of nutritive constituents found in them.

Text-books.—1. Practical Cooking Manual. 2. Human Foods—Harry Snyder.

A fee of ten dollars ($10.00) will be charged for one or all the courses.

COLLEGE OF CIVIL ENGINEERING

Students who wish to secure additional credit, or make up deficiencies, will find the Summer Session of the College of Civil Engineering decidedly advantageous. Work done at the Summer Session will receive the same attention and will be given by the regular staff of instructors as that of the regular college session. Short courses will be especially arranged for those who are unable to attend the regular session, but who desire to prepare themselves for more advanced engineering work.

COURSE IN DETAIL.

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.

MECHANICAL DRAWING.—Free-hand and mechanical lettering; geometrical problems; detail and dimension drawing; pen topography.

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.

GRAPHIC STATICS.—Principles and Methods; Roof Trusses; Bridge Trusses; Locomotive Wheel Loads; Trusses with broken chords.

RAILWAY ENGINEERING.—Simple and compound curves. Changing radius. Shifting curve. Turnouts from straight track. Turnouts from curved track. Railroad location. Earthwork computation.

ROOF AND BRIDGE DESIGN.—Theory and design of roofs, bridges, stand-pipes, towers and other problems of structural interest.

STONE CUTTING.—Plane-sided surfaces; Structures containing developable surfaces; Structures containing warped surfaces; Structures containing double-curved surfaces.

EXPENSES.

A fee of ten dollars, payable in advance, will be charged for any one course, and five dollars each for all additional courses.

For further information send for regular University catalogue, or write.

WALTER E. ROWE,
Dean College of Civil Engineering,
347 Transylvania Park, Lexington, Ky.

COLLEGE OF MECHANICAL AND ELECTRICAL ENGINEERING

SUMMER SCHOOL IN MECHANIC ARTS.

JUNE 14th—AUGUST 7th.

Professor F. Paul Anderson, Director.

OBJECTS OF THE SCHOOL.

The Summer School in Mechanic Arts was first established to give to machinists, carpenters, metal workers, engineers, firemen, superintendents of electric light plants, public buildings having power plants, and artisans of all classes that training in engineering subjects which they have been unable to secure in the ordinary plans proposed by correspondence schools and technical books. The courses are especially adapted to young men who are contemplating taking up engineering work. High-school students are enabled to carry shop-work courses and drawing-room courses during the summer, so as to relieve themselves of the great burden of carrying this work in connection with the four-year courses in engineering. For most of the work in connection with the industrial arts, it is not necessary for a man to have a full and comprehensive course for four years, such as is given in an engineering college.

A working knowledge of mechanical drawing is almost indispensable to a mechanic in every line of work. The ability to make drawings is not only of value in itself, but the study of mechanical drawing develops the power to read and interpret mechanical and architectural drawings properly. Elementary courses have been projected in the Summer School in all of the branches taught in the full four-year course in mechanical and electrical engineering, and all of these subjects are presented from an elementary standpoint, without the aid of higher mathematics. Courses are provided in testing of steam and electrical machinery, and all problems relative to the transmission of power. The main object of the Summer School is to give the greatest possible freedom in the selection of those subjects in which any man may be interested.

ENTRANCE CONDITIONS.

No detailed educational requirements will be specified for entrance in the Summer School. Every applicant will be allowed to pursue any course that he elects, and the course chosen may be pitched on a thoroughly fundamental plane.

A speaking and writing knowledge of the English language is desired, together with a knowledge of elementary arithmetic. It is intended that no man shall be handicaped on account of his previous

education, for an attempt is made to put all courses on such a basis that they are within the reach of every man.

SUMMER SHOP WORK COURSES FOR STUDENTS IN ENGINEERING.

Those students who are matriculated in the full four-year engineering courses of any engineering school will be given such instructions as will enable them to clear up the shop work and receive credit for this work in connection with their full engineering courses.

HIGH-SCHOOL STUDENTS AND THOSE CONTEMPLATING TAKING AN ENGINEERING COURSE.

Students in high schools will be able during their summer vacations to practically complete all of the shop work, and a great deal of the elementary mechanical drawing required in the advanced courses in engineering while carrying on their academic studies preparatory to taking up their college engineering work later.

STUDENTS FROM OTHER COLLEGES.

Many young men who are pursuing courses in Arts, Letters and Science in schools throughout the South will be enabled to obtain a proficiency in certain technical branches that are not given in the courses in which they are matriculated.

REMOVING CONDITIONS.

Students in the engineering courses who have been conditioned in any subject in the regular course will be enabled during the Summer School session to clear up such deficiencies. No guarantee will be given that any student can remove conditions. Ample opportunity will be afforded to all students to do the work that is necessary to remove conditions in any subject occurring in the regular course in mechanical and electrical engineering. The results obtained in making up work during the summer session will depend largely upon efforts of the individual student.

ENGINEERING STUDENTS

Both actual and prospective, will be enabled to complete subjects that are required in the regular course of Mechanical and Electrical Engineering in which they are deficient. Shop-work courses may be taken during this summer session.

Manual Training School Teachers can, during this summer session, obtain the requisite shop practice.

MECHANICAL DRAWING.

Special courses in Mechanical Drawing are provided. During the eight weeks' period of this Summer School a student may acquire sufficient skill in the use of drawing instruments to take up the simpler work in an architect's offce or in the drafting-room of a machine-building establishment.

CERTIFICATE OF COMPLETION OF WORK.

No diplomas or formal certificates will be given for work done in the summer courses, but the Dean of the School of Mechanical and Electrical Engineering will present to each student, upon completion of a certain line of work, a statement that certain work has been accomplished and that certain proficiency has been attained.

ELECTION OF SUBJECTS.

All students contemplating the summer work are expected to report at the beginning of the summer term and remain for a period of eight weeks. Considerable freedom will be allowed in the selection of studies, and every student will be allowed to take all the work that he can carry.

The hours of recitation, shop work, drawing-room and laboratory exercises will extend from 8 a. m. to 1 p. m., and from 2 p. m. to 5 p. m., and on Saturdays from 8 to 12 m., and every student is expected to put in forty-three hours each week on his work.

THE DEPARTMENTS OF WORK.

I. Courses in Steam and Gas Engineering.
II. Courses in Applied Electricity.
III. Machine Design.
IV. The Materials of Construction and Transmission of Power.
V. Shop Work.

FEES AND EXPENSES.

A uniform fee of $25.00 (twenty-five dollars) will be charged every student in the Summer School. No fees will be refunded except in a case of sickness or unavoidable withdrawal before the middle of the session. The total expense for the eight weeks of the Summer School in Mechanical Arts, including board and room rent, may be kept between fifty and sixty dollars. Of course, cost of living depends largely upon the degree of comfort and luxury desired.

FOUR-YEAR PROFESSIONAL COURSES.

A bulletin pertaining to the full Four-year Course in Mechanical and Electrical Engineering of the State University of Kentucky can be obtained on application.

For all information relative to Summer School in Mechanic Arts, address

A. M. Wilson, M. E.,
Lexington, Ky.

COLLEGE OF MINING ENGINEERING

THE SHORT COURSE IN MINING.

Professor Norwood, Assistant Professor Easton, and Assistants Quickel and Barr.

Although this is one of the three regular courses authorized by the Board of Trustees to be given in the College of Mining Engineering, namely, the Four Years Course, leading to a degree, the Two Years Course, and the Short Course, in which certificates of proficiency are awarded, it is necessarily given during the summer months, to meet the convenience of those for whom it is intended; hence this announcement for the coming session of ten weeks (June 14th to August 21st) is included in the Bulletin relating to Summer Schools. It is hoped that ultimately the course may be given earlier in the year.

The course is intended especially for practical miners, mine foremen, and mine managers who desire to improve their knowledge of the principles that underlie the methods of coal mining. Instruction will also be given to others, however, who may wish to acquire some knowledge of mining. It is understood that, if not the only course of the particular kind given in the United States, this is the first one of the sort to be definitely established.

There are no entrance requirements. Any person having a knowledge of elementary arithmetic is equipped to solve all mathematical problems presented to him, and those who are weak in mathematics are strengthened. A man is dealt with according to his attainments and capacity; for those who can take advanced work, such work is provided.

The course includes instruction in—

1. The Different Systems of Mining Coal.—Laying out the workings. Methods for thin and thick seams, and for flat and pitching seams. Causes and management of squeezes, etc., etc.

2. Blasting.—Various explosives. Pointing and loading holes. Evils resulting from improper blasting. Dangerous and safe methods. Dangers from black powder and dynamite. Precautions in blasting.

3. Ventilation.—Necessities for ventilation. Composition of mine air. Wholesome air. Methods of obtaining and increasing ventilation. Study of furnaces and fans. Methods of coursing, splitting and regulating the current; overcasts and undercasts, etc. Measuring the ventilation; use of anemometer, water gauge, etc.

4. Mine Gases.—Nature and origin of each. Indications of the presence of each. Testing for explosive gas and black damp. 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 percentages of marsh gas on the safety lamp flame is shown.

5. Explosions.—The various causes. Relation of coal dust to explosions, and management of dust. Relation of blasting to coal dust and other explosions. Prevention of explosions.

6. Supporting Excavations.—Including the principles underlying timbering, the different methods of timbering, computing the strength of pillars, etc.

7. Safety Appliances for Shaft and Slope Mines.

8. Haulage, Pumping.—Electric and Compressed Air mine machinery. Such instruction in these subjects will be given as may be encompassed within the time allotted for the course, and according to the limitations affecting the students in attendance.

9. Surveying.—Including use of compass (or of transit, as the case may be), putting up sights, marking off rooms at various angles, grading track (use of level), laying out curves, etc. Also, drawing the mine map.

10. Mine Accidents.—Causes, and methods of rescue.

The instruction is illustrated with demonstrations and experiments wherever possible. The equipment includes a mine fan, which may be used to illustrate the principles both of the forcing fan and of the exhaust fan system. Also, anemometers, water gauge, safety lamps of various types, Baldwin acetylene mine lamps, explosion box, surveying instruments, means for studying compressors, etc.

Students will be expected to provide themselves with drawing tools and material, which may be purchased in Lexington, if necessary, at reasonable rates.

Persons desiring to take examinations for mine foremen from time to time, and others who already hold certificates, will find the course quite helpful. Those who are now or have been taking "correspondence courses" will also find the ten weeks of personal instruction very beneficial.

The course opens June 14th and closes August 21st. Fee, $10.00.

Room and board, $2.50 to $3.50 per week.

For further information, address

C. J. Norwood or H. D. Easton,
Lexington, Ky.

COLLEGE OF LAW

In connection with the summer courses of instruction in other departments of State University, the College of Law will offer special courses in law, beginning June 10, 1909 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, but have had no training in a law school; for those who wish to review the law to familiarize themselves with the theory, or to prepare for advance standing in pursuing the law course to graduation in this University.

Work successfully completed during the Summer Session will be credited as if done during any regular session.

The Dean of the College of Law will conduct the Summer School, assisted by the members of the Law Faculty; and during the term arrangements will be made for special lectures.

The entire fee for the summer term will be $10.00, payable at the time of matriculation.

For further information, address

W. T. LAFFERTY,
Dean of Law College, State University,
Lexington, Ky.

THE STATE UNIVERSITY

LEXINGTON, KENTUCKY

FALL TERM BEGINS SEPTEMBER 9th, 1909

For Catalogues, methods of obtaining appointments, information regarding courses of study and terms of admission, apply to

JAMES K. PATTERSON, Ph. D., LL. D., President,
or to D. C. FRAZEE, Business Agent.