

THE NEW YORK STATE SCHOOL
OF CLAY-WORKING AND CERAMICS



ALFRED, NEW YORK

1908-1909

Board of Managers

(Appointed annually by the Trustees of Alfred University)

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Calendar

FIRST SEMESTER, 1908—1909

		1908
Registration, Entrance Examinations	Tuesday	Sept. 15
Instruction begins	Wednesday	Sept. 16
Election Day	Tuesday	Nov. 3
Thanksgiving recess begins	Tuesday evening	Nov. 24
THANKSGIVING RECESS		
Instruction resumed	Monday morning	Nov. 30
Holiday Recess begins	Thursday evening	Dec. 17
HOLIDAY RECESS		

		1909
Instruction resumed	Tuesday morning	Jan. 5
Semester Examinations begin	Monday	Jan. 25
Examinations end, Semester ends	Friday	Jan. 29

SECOND SEMESTER, 1908—1909

Instruction begins	Monday morning	Feb. 1
Washington's Birthday	Monday	Feb. 22
Spring Recess begins	Thursday evening	Apr. 8
SPRING RECESS		
Instruction resumed	Tuesday morning	Apr. 13
Memorial Day	Sunday	May 30
Examinations begin	Monday	May 31
Examinations end	Monday	June 7
Degrees conferred at University Commencement	Thursday	June 10
SUMMER VACATION		

FIRST SEMESTER, 1909—1910

		1909
Registration, Entrance Examinations	Tuesday	Sept. 14
Instruction begins	Wednesday	Sept. 15
Election Day	Tuesday	Nov. 2
Thanksgiving Recess begins	Tuesday evening	Nov. 23
THANKSGIVING RECESS		
Instruction resumed	Monday morning	Nov. 29
Holiday Recess begins	Wednesday evening	Dec. 22
HOLIDAY RECESS		

		1910
Instruction resumed	Wednesday morning	Jan. 5
Semester Examinations begin	Monday	Jan. 24
Examinations end, Semester ends	Friday	Jan. 28

SECOND SEMESTER, 1909—1910

Instruction begins	Tuesday morning	Feb. 1
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Faculty

CHARLES F. BINNS, SC. M., Director,
Professor of Ceramic Technology.

ALPHEUS B. KENYON, SC. D.,
Professor of Mathematics and Graphics.

DAVID H. CHILDS, SC. B.,
Professor of Chemistry and Physics.

WAYLAND D. WILCOX, Ph. B.,
Professor of English.

JAMES D. BENNEHOFF, SC. M.,
Professor of Natural Science.

LINTON B. CRANDALL, SC. B.,
Professor of Industrial Mechanics.

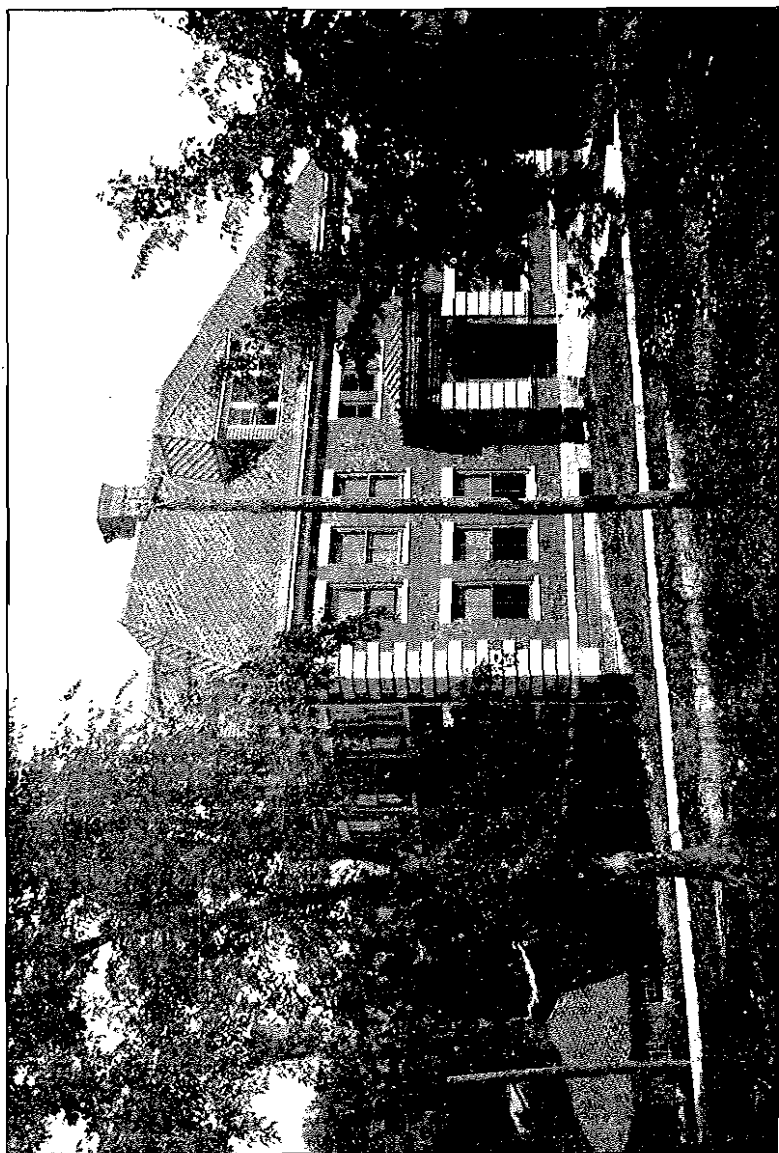
CHESTER GRAHAM, A. B.,
Associate Professor of Modern Languages
and Director of Physical Training.

MAY S. HAYDOCK,
Instructor in Art.

ERNEST S. HARTLEY,
Assistant in Ceramic Technology.

JOHN J. RYAN,
Assistant in Chemistry.

A. L. WHITEFORD,
Janitor and Machinist.



The New York State School

New York State School of Clay-Working and Ceramics

In the field of applied science and commercial engineering the subject of Clay-Working is becoming daily more important. To the architect and builder clay offers the most satisfactory fire-proof material, to the housewife pottery is indispensable and to the artist clay and clay-wares afford at once a facile means of expression and a prominent feature of home decoration.

The problems which confront the clay-worker are unique. He must learn to win his material economically from the earth, to shape his wares with due regard to both utility and art, to glaze or otherwise finish them in a satisfactory manner and to burn the whole successfully upon a large scale. His education must therefore be comprehensive and complete. He must, in a word, be a specialist, and to this end the New York State School was established.

Chapter 383, Laws of New York State, 1900, provided for the construction and maintenance of the school, and in order to secure the necessary facilities for collateral branches of study Alfred University was chosen as the location.

For this work the University offers great advantages. Laboratories of chemistry and physics, libraries, museums of geology and natural history, workshops for manual training, and all the departments of general culture are available, so that the many and varied requirements of a liberal education are fully met.

The State of New York contains vast deposits of clays and shales at present lying dormant, it also contains large

numbers of young men and women who are seeking profitable employment. The work of the school is to bring these together. Neither the science nor the art is neglected. Attention is given to the improvement of methods of manufacture and the reduction of cost so that the resources of the state may be fully developed and that within its borders may be manufactured the clay-wares, both coarse and fine, necessary for its own consumption.

Building and Equipment

The building of the New York State School of Clay Working and Ceramics has been especially designed for the purposes of the school, and is located on land which was deeded by Alfred University to the people of the State of New York. It is built of red brick and terra-cotta with gray trimmings and roofed with brown tile. It has a floor space of about thirteen thousand square feet, and a frontage of seventy-five feet.

In the lower story are located the heavy machinery for the manufacture of brick, tile, hollow blocks and roofing tile, the slip-making plant, cylinders for glaze preparation, and a workshop fitted with modern appliances for pottery and porcelain manufacture. There are also rooms for mold making and drying, and a damp cellar.

The motive power is supplied by a 36 horse power, Otto gas engine, and a 6 horse power Fairbanks gas engine; natural gas being available.

On the principal floor are located the executive offices, rooms for the director, laboratories, and a class room.

The technical laboratories contain the following apparatus and appliances; small blunders for samples, ball mills for grinding, a Case crusher, a power blower, four gas furnaces, an air brush, an electric furnace, dynamo for the same, cement testing machine, gas analysis apparatus, elutriation apparatus, draft meter, pyrometers, vacuum air pump, apparatus for expansion measurements, polarizing microscope, scales and balances.

The art department of the school is placed on the second floor. Studios are arranged, provided with the facilities necessary for the practice of mechanical drawing, free-hand drawing and applied design. Adjoining these is the modeling room where, in addition to ornamental work in clay, the production of pure form is studied. Space is provided for a ceramic museum in which examples of clay work of every type may be found.

Adjacent to the main building is the kiln house, within which are two kilns; one for firing common wares at a low temperature, the other for high temperature work.

Within a short distance of the school there are two plants in which are manufactured bricks by both the wet and dry processes, several styles of roofing tile, and quarries for floors and roofs. Here may be seen the actual working of manufacturing plants, and the use of at least three kinds of kilns, including a continuous kiln.

Courses Offered

The courses of study which lead to a degree extend over a period of four years and embrace, together with the science, technology and art special to clay-working, such subjects as are the equivalent of the usual college course. Certain subjects are required, but the ceramic work is elective as to the particular branch of clay working to be followed.

The technical course is designed to qualify men to occupy positions as superintendents, scientific experts and ceramic chemists.

The course in ceramic art is intended to fit the student for the designing and producing of artistic pottery. The course covers a wide field of art and letters in the belief that a successful artist must possess a liberal education.

For the accommodation of those desiring to qualify as teachers it is permitted to elect psychology, history of

education and pedagogy in place of other college subjects. An opportunity for practice teaching is afforded in the public schools of Alfred.

Students having a practical knowledge of clay-working will be received for short terms, and certificates will be given according to the work done.

Benefits of the School

The demand for trained clay-workers has grown to considerable proportions during the last few years. Capital is becoming more and more interested in the development of clay lands and shale banks; nor is there any likelihood that this interest will decrease.

On the other hand the number of men who have studied in schools is very small compared with the openings to be filled. Hitherto, no student who has passed through the school successfully has remained unemployed, and the director is continually in receipt of applications for persons qualified to fill responsible positions. Every effort is made by the faculty to place the students in communication with manufacturers desiring to offer them employment.

The student successfully pursuing the technical course will be able, presuming that his personal capacity be good, to take up the practical work of manufacturing clay wares. He will have had experience with every description of clay, and with the minerals and oxides used in preparing bodies and glazes. He will have acquired a knowledge of machinery and kilns which he will find of the greatest value; in short, he will be a trained man as regards the problems of clay-working.

Students who conscientiously pursue the course in ceramic art will be able to design and make artistic pottery, preparing their own clays and compounding their own glazes, if necessary. Those who elect normal studies will be thoroughly equipped to teach not only clay-working, but drawing and design in schools.

Physical Training

There are two gymnasiums in connection with Alfred University. The women have a large, well ventilated room on the third floor of the Ladies Hall, equipped with apparatus for light gymnastics. The gymnasium for men is equipped with dumb bells, wands, Indian clubs, horizontal and parallel bars, rings, poles, and floor mats. A dressing-room with individual lockers is provided. A bath room with shower baths and two hand ball courts have recently been added to the facilities of the gymnasium. Each gymnasium is in charge of an instructor. All students, unless excused by the instructor on the advice of a physician, are required to do two semester hours of work during the freshman year, under the direction of the instructor in physical training. The University athletic field embraces over three acres of level land. All intercollegiate contests in football, baseball, and track athletics are held on this field. The field affords a running track (one sixth of a mile). Appropriate apparatus for field sports is provided.

Outdoor Sports are in the immediate charge of the athletic association of Alfred University which has a football team playing under inter-collegiate rules, a baseball nine, and a basketball team. The tennis club, which is provided with excellent courts, maintains an annual tournament. Athletics, however, are not carried to extremes. The committee on athletics from the faculty, and the graduate manager, exercise general supervision, for it is the purpose of the school to give due attention to the physical welfare of its students and at the same time keep the physical development in proper relation to intellectual and moral development.

Registration

All the students will register at the office of the University on the first day of the college year; and students

entering at the beginning of the second semester will register on the first day thereof. Any student not registering on the day set therefor will be charged a fee of two dollars for late registration.

Fees per Semester

Students residents of the State of New York for one year preceding the date of their admission are entitled to free tuition.

TUITION AND INCIDENTAL FEE (Except to residents of New York State)		\$25 00
READING ROOM FEE		30
EXTRAS, for use of instruments and laboratory materials:		
Gymnasium fee (all Freshmen, and others taking instruction)	1 00	
Surveying	4 00	
Elementary Chemistry	4 00	
Blowpipe Analysis and Mineralogy	4 00	
Quantitative Analysis, Advanced Quantitative Analysis or Clay Analysis	6 00	
Qualitative Analysis	7 50	
Organic Chemistry	5 00	
Physics, Laboratory	5 00	
Botany or Zoology	4 00	
Entomology	2 00	
Physiology	1 00	
Shop Fee	4 00	
Art Materials	1 00	
GRADUATION FEE	5 00	

A rebate is granted of any portion of the fees for chemical laboratory remaining unused at the end of the semester.

Special students, not residents of the state, taking fewer than eight exercises per week will be charged three dollars for each semester hour.

Bills will be presented soon after the beginning of each semester and must be paid at the office of the treasurer before the third Friday of the semester.

Terms and Vacations

The school year consists of two terms, or semesters, of about eighteen weeks each. There is a recess at Thanksgiving, extending from Wednesday evening until Monday morning following; a vacation at the Holidays of about two weeks; a short recess at Easter time; and a summer vacation of about fifteen weeks.

Class Exercises

The class exercise period is one hour in length; in laboratory work, however, the class exercise continues through two or more hours, as the case may be. There are no class exercises on Saturday or Sunday. The schedule of recitation is fixed by the faculty. Each student is expected to have at least fifteen exercises per week. Students who take more than seventeen exercises weekly must maintain an average standing of ninety per cent and obtain the consent of the director. Any student who fails to attain a standing of at least seventy-five per cent in a given subject will not receive credit in that subject.

No student, unless registered for less than ten exercises, will be permitted to remain in the school unless he has received credit for ten hours of work in the preceding semester.

Unit of Measure or Credit

One class exercise per week for one term, or semester, is taken as the unit of measure or credit, and is termed a semester hour. In each course one hundred and twenty semester hours are required.

Absences and Excuses

Excuses for absence from class exercises are made to the instructor in charge of the exercise. One per cent is deducted from the standing in any subject for each unexcused absence. Absences during the three days immediately preceding or following any vacation or recess count double. Two tardy marks count as one absence. Any student absent from recitations more than three times for each semester hour's credit given for any course, shall forfeit his right to receive credit for that course except by vote of the faculty.

Examinations

Final examinations are held at the close of each semester in addition to occasional written tests during the semester. Fees will be charged for all examinations taken by those not regular members of classes, or at other times than those appointed for the class examinations.

Admission

Candidates for admission to the freshman class must be at least fifteen years of age and must present certificates of good moral character. The particular requirements for entrance are explained below. Preparatory work may be estimated either in "units" or in New York State regents "counts." The "unit" represents a course of five recitations weekly throughout an academic year of the preparatory school. The regents "count" represents one recitation weekly for one year. Fifteen "units" or seventy-five "counts" must be offered.

Entrance Requirements

[a] To the Technical Course

ENGLISH—3 units or 15 counts. The candidate must be familiar with elementary rhetoric, both as a science and an art, and must be proficient in spelling, punctuation, idiom, and division into paragraphs. Preparation must include the work in English prescribed by the various college associations.

Each student must be able to pass an examination upon ten books selected from the list proscribed by the college entrance associations. The following ten are recommended: Shakespeare's *Julius Caesar*, and *The Merchant of Venice*; The *Sir Roger de Coverly Papers*; Goldsmith's *The Deserted Village*; Scott's *Ivanhoe*; Hawthorne's *The House of The Seven Gables*; Carlyle's *Heroes and Hero Worship*; Ruskin's *Sesame and Lilies*; Lowell's *The Vision of Sir Launfal*; and Tennyson's *Lancelot and Elaine*.

In addition to the above a thorough study of each of the works named below is required. The examination will be upon subject matter, form and structure.

Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

MATHEMATICS. 3 units or 14 counts, viz: Elementary Algebra including fundamental operations, factoring, fractions, ratio, proportion, radicals, quadratics, Plane Geometry, including the straight line, angle, circle, proportion, similarity, and areas. Solid Geometry and Plane Trigonometry.

FOREIGN LANGUAGES. 2 units or 10 counts. Any one language may be offered.

The candidate will be expected to have a practical knowledge of pronunciation, as well as a thorough mastery of grammatical forms and syntax, and to possess a familiarity with the literature in proportion to the amount of work offered.

DRAWING. 1 unit or 6 counts. A year's course in Drawing.

SCIENCE. 3 units or 15 counts. Biology, Physical Geography, Physics, Chemistry. Any three may be offered.

ELECTIVES. 3 units or 15 counts.

SUMMARY

English	3	units	or	15	counts.
Mathematics	3	"	"	14	"
Foreign Languages	2	"	"	10	"
Drawing	1	"	"	6	"
Science	3	"	"	15	"
Elective	3	"	"	15	"
Total	15	"	"	75	"

[b] To the Art Course

For entrance to the course in ceramic art and normal study the requirements are those admitting to either of the courses in Alfred University.

NOTE—Candidates for admission to any of the above courses, may, in exceptional cases, offer equivalents as substitutes for the required studies subject to the approval of the director.

Admission is gained either on certificate or on examination, as follows:

Admission on Certificate

REGENTS' CREDENTIALS. The credentials of the University of the State of New York are accepted instead of an examination in the subjects required for admission, so far as they cover these requirements. [For description of subjects, see *Entrance Requirements*.]

PRINCIPAL'S CERTIFICATE. Certificates are also received from principals of preparatory or high schools outside of New York State, provided such schools are known to the faculty for thoroughness of instruction. Such certificate must specify, in connection with each subject, the extent to which it has been pursued, by giving the text-book used, the method of instruction, the amount of time given to it, the date of the final examination, the degree of the applicant's proficiency, and must clearly show that the student has met the requirements in every detail. The school furnishes blank forms for such certificates upon application of principals of approved schools.

Principals of preparatory schools who desire to have their students admitted on certificate are invited to correspond with the director.

Admission on Examination

Candidates who fail to present satisfactory certificates must pass a written examination in the required subjects. Examinations in all subjects required for admission are held at Alfred at the beginning of the year. Candidates must report at the director's office and obtain permits for examination. The result of the examination may be obtained from the director.

Conditioned Students

Under the provisions of section 59 of the ordinances of the University of the State of New York no student can enter the freshman class conditioned in more than three academic subjects. These conditions must be removed within one year. The text of the ordinance is as follows:

"§59 Degree Preliminaries. No degree shall be conferred on students matriculating after Jan. 1, 1905, for completion of a course of study or on examination, unless the candidate has as a preliminary general education at least a four-year high school course or its full equivalent as determined by the University rules. Satisfactory evidence of such preliminary education must be offered before beginning the course of study for the degree, and any condition for deficiency (which must not exceed three academic subjects) must be made up within one year."

Admission to Advanced Standing

Students from other schools, having a course equivalent to that of the New York State School, may enter at the point from which they take dismissal, upon presentation of satisfactory certificates of standing and character, including an honorable dismissal.

Senior Thesis

There is required of each candidate for a degree a thesis, for which credit is given, two hours in the first semester and three in the second semester of the Senior year. The title of the thesis must be chosen in the field of Ceramics not later than November 1, and must be approved by the director. The thesis shall embody the results of actual independent research, and must be submitted for approval not later than June 1. A type-written copy must be deposited with the director.

Graduation

While no student will be permitted to graduate with a smaller credit than one hundred and twenty semester hours, four full years of resident work will be required in either course. Upon students who satisfactorily complete the technical course Alfred University will confer the degree of Bachelor of Science, and upon students who satisfactorily complete the course in Ceramic Art the degree of Bachelor of Philosophy.

Courses of Study

The studies in the Freshman and Sophomore years are required. Those of the Junior and Senior years are elective in part, but every student is expected to cover as far as possible the subjects indicated.

Required Studies

Arabic numerals indicate the number of class exercises per week.

Freshman Year			
TECHNICAL COURSE		ART COURSE	
English	3	English	3
Foreign Language	3	Foreign Language	3
Chemistry (1)	3	Chemistry	3
Mathematics	3	Mathematics	3
Laboratory	1	Art Studios	3
Woodshop	2		
Physical Training	1	Physical Training	1
	16		16

Sophomore Year			
TECHNICAL COURSE		ART COURSE	
English	2	English	2
Mathematics	3	Foreign Language	3
Chemistry (3)	2	Logic and Psychology	2
Physics (1)	3	Art Studios	3
Ceramic Theory	2	Ceramic Theory	2
Machine Shop	2	Philosophy	2
Laboratory	2	Laboratory	2
	16		16

Students in the technical course will take ceramic technology as major subject and will elect as minor, chemistry, mathematics or a foreign language.

Students in the art course will take ceramic art as major, and will elect as minor, history, philosophy, natural science or mathematics.

The major subject shall consist of sixteen semester hours and the minor of ten semester hours.

The following subjects should be pursued as far as possible in the Junior and Senior years.

TECHNICAL COURSE	ART COURSE
Chemistry (2)	Zoology (1)
Physics (1)	Botany (2)
Geology (1)	Drawing
Economic Geology (3)	Design
Mineralogy of Clay	Modeling
Chemistry (6)	Chemistry (3)
German	History (1)
Graphics	" (2)
Surveying (4)	" (3)
Advanced Ceramics	History of Education (4)
Chemistry (7)	History of Art
Chemistry (8)	English (12)

The numbers in parenthesis refer to the courses described in the catalogue of Alfred University to which reference should be made.

Departments of Instruction

Technology

Professor Binns

Mr. Hartley

1. A course of lectures, with recitations, on the principles of calculation involved in ceramic composition. First semester. Sophomore year, two hours.

2. A course of lectures, with recitations and notes, on the methods of manufacture of clay wares, ancient and modern. Second semester. Sophomore year, two hours.

3. A course of lectures, with recitations and notes, on the mineralogy of clay. Junior year, two hours.

4. A course of lectures, with recitations, on the technology of clay wares for special purposes. White wares, faience, earthenware, sanitary ware, once-fired ware, fire-proof and refractory ware, hard and soft porcelain, electrical insulating ware. Senior year, two hours.

5. A course of laboratory demonstration and practice. Methods of manufacture. Elementary kiln work. Sophomore year, two hours.

6. A course of laboratory demonstration and practice. Mixing clay bodies and glazes. Chemical and mineral analysis of clays. Junior year, four hours.

7. Laboratory and workshop practice in continuation of course 6. Production of fine and special wares. Kiln construction and pyrometry. Senior year, six hours.

Students in the short course will be admitted to any of the foregoing lectures and laboratory work at the discretion of the faculty.

Chemistry

Professor Childs

Mr. Ryan

1. GENERAL CHEMISTRY. For beginners. Two recitations or lectures a week and one two-hour laboratory period. *Three hours.*

2. ADVANCED INORGANIC CHEMISTRY. This course takes up a more detailed consideration of inorganic chemistry than course 1, and is planned to teach the student the modern theories and views. Prerequisite, course 1 or its equivalent. *Two hours.*

3. QUALITATIVE ANALYSIS. The detailed separation and identification of the metals, non-metals and acid radicals. A laboratory course consisting of four hours of laboratory work a week throughout the year, with an occasional lecture. Prerequisite, course 1, or its equivalent. *Two hours.*

4. QUANTITATIVE ANALYSIS. A laboratory course of four hours laboratory work a week throughout the year. The work embraces the principal methods of gravimetric and volumetric analysis. Prerequisites, courses 1 and 3. *Two hours.*

5. [ORGANIC CHEMISTRY. Two recitations or lectures and one two-hour laboratory period a week throughout the year. The systematic study of the chemistry of the hydrocarbons is taken up and many typical compounds are prepared in the laboratory. *Three hours.*]

6. CLAY ANALYSIS. The detailed analysis of clays and like bodies, two laboratory periods of two hours each during the first semester. Prerequisites, courses 1 and 3. *Two hours.* 1,

7. **ADVANCED QUANTITATIVE ANALYSIS.** The analysis of fuels, gases, special work with clays and work with the combustion furnace are taken up. Four hours laboratory work a week during the second semester. Prerequisites, courses 1, 3, and 6. *Two hours. II.*

8. **PHYSICAL CHEMISTRY.** The study of the concepts and views of modern physical chemistry. Solutions, chemical equilibrium, the phase rule, chemical kinetics, etc. Much assigned reading is covered and original problems solved. Prerequisites, courses 1, 2, 3, and preferably 5. Recitations and lectures. *Two hours.*

Physics

Professor Childs

1. A course in general physics for those who have had high-school physics, and covering the subjects of mechanics, properties of liquids, solids and gases, sound, light, heat, magnetism and electricity. The student should have studied trigonometry, college algebra and preferably analytic geometry. Recitations and lectures. *Three hours.*

2. A laboratory course consisting of two two-hour periods throughout the year. Open to those who have taken or are taking course 1. The first semester covers measurements of precision, electricity and magnetism, sound and light. The second semester is devoted to heat and to special applications of Physics to Ceramics. *Two hours.*

Mechanical Drawing

Professor Crandall

1. A course of instruction in mechanical drawing, general principles, and use of instruments.

2. Descriptive geometry, orthographic projection, projection of shadows, linear perspective, intersection and development of geometrical surfaces.

3. Making of plans, elevations and details, lettering, machine drawing and the making of blue prints.

Ceramic Art

Professor Binns

Miss Haydock

The college subjects in this course are intended to afford the student a grasp of the history of the world with its progress in culture. With this view a close study of the history of art is expected. Lectures on the elements of beauty in form and decoration and on the possibilities and limitations of clay in ornamental work are given at the same time as the studio work. The exercises may extend over all the four years of the course.

1. A course of instruction in drawing from casts, nature, and life, in pencil and charcoal.

2. A course of instruction in composition and design. The study of beauty and the principles leading to its expression.

3. A course of instruction in clay modeling from casts, nature and life.

4. A course of instruction in pottery design. Designing and production of pottery forms. Building and the potter's wheel.

5. A course of instruction in pottery decoration. Incising, inlaying and embossing. The use of under-glaze colors.

6. A course of instruction in applied modeling. Production of form in clay and plaster. Architectural terra cotta.

Attention will be given to the natural ability of each student and specialization will be encouraged.

Students who have already taken a college course or its equivalent may devote their entire time to the study of ceramic art at the discretion of the faculty.

Department of Investigation and Research

Clay Testing

Professor Binns

Professor Childs

The State School of Ceramics is fitted and the experts in charge are qualified, for the professional examination and testing of clays for economic purposes. Such clays may be classified under the following heads:

- (a) Kaolin, white burning residual clay.
- (b) Kaolin, white burning, washed for market, used in the manufacture of pottery, porcelain and paper.
- (c) Ball clay, white or cream burning, sedimentary clay of high plasticity, used in pottery manufacture.
- (d) Stone ware clay, gray or cream burning, more or less sandy in character, used in stoneware manufacture.
- (e) Fire clay, buff or white burning, refractory, used for manufacture of fire brick.
- (f) Brick clay, including colored clays and shales, used for the manufacture of brick and tile of various qualities and descriptions.

For each of the above classes special tests are necessary, and the charges made are proportionate to the work required.

A report upon each sample will be furnished and must be understood to refer only to the sample submitted unless the experts are instructed to examine the deposit and prepare their own samples, in which case special charges will be made. The report includes physical tests, and chemical analysis where necessary.

Advice as to washing or other preparation of the clay is also given, together with an opinion as to the industry to which the material may be applied.

Industrial Problems

Professor Binns

The problems incidental to the manufacture of clay wares are regularly investigated at the school. Manufacturers are invited to present questions for study. Persons resident within the state are entitled to reasonable services without charge.

