Alfred University Publication

State University of New York
College of Ceramics

CATALOG NUMBER 1953-54

CALENDAR FOR 1953-1954 AND 1954-1955

		1953	*1954
First Semester			
Registration	Mon.-Thur.	Sept. 14-17	Sept. 13-16
Instruction begins	Fri.	Sept. 18	Sept. 17
Registration part time graduate students	Mon. 5 to 8 P.M.	Sept. 21	Sept. 20
Founders' Day	Thur.	Nov. 5	Nov. 4
Mid-Semester Grades	Mon.	Nov. 16	Nov. 15
Thanksgiving recess	Wed. 10:00 A.M.	Nov. 25	Nov. 24
Instruction resumed	Mon.	Nov. 30	Nov. 29
Christmas recess	Wed. 10:00 A.M.	Dec. 16	Dec. 15
		1954	1955
Instruction resumed	Mon.	Jan. 4	Jan. 3
Mid-year examinations	Wed.	Jan. 20	Jan. 19
Examinations end: Sem. ends	Fri.	Jan. 29	Jan. 28
Second Semester			
Registration new students	Wed.	Feb. 3	Feb. 2
Instruction begins	Thur.	Feb. 4	Feb. 3
Registration of part time graduate students	Thur. 5 to 8 P.M.	Feb. 4	Feb. 3
St. Pat's Festival — Half hol.	Thur. & Fri.	Mar. 18-19	Mar. 17-18
Mid-semester grades	Mon.	Mar. 29	Mar. 28
Spring recess	Fri. 10 A.M.	Apr. 9	Apr. 6
Instruction resumed	Tues.	Apr. 20	Apr. 13
Moving up day	Thur.	May 7	May 16
Pre-registration	Week of	May 10-14	May 16-20
Final examinations	Wed.	May 26	May 25
Exams end: Semester ends	Fri.	June 4	June 3
118th Anniversary Comm.	Mon.	June 7	June 6
Intersession			
Term begins	Tues.	June 8	June 7
Term ends	Fri.	June 25	June 24
Regular Summer Session			
Term begins	Mon.	June 28	July 5
Term ends	Fri.	Aug. 6	Aug. 12

* For 1954-55 Calendar days of week not given.

STATE UNIVERSITY OF NEW YORK

COLLEGE OF CERAMICS AT ALFRED UNIVERSITY

ALFRED UNIVERSITY PUBLICATION

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STATE UNIVERSITY OF NEW YORK

DESCRIPTION

The College of Ceramics at Alfred University, Alfred, New York, is part of State University of New York which was established by the State Legislature in 1948. State University now comprises twenty-one colleges and six institutes. There are, in addition, nine community colleges which it supervises. While separated geographically, all these are united in the purpose to improve and extend, where necessary, opportunities for youth to continue their education after high school. Ninety-four per cent of New York high school graduates live within commuting distance of one of the State University institutions.

State University offers cultural, technical, and professional courses of study which include liberal arts, mechanical technology, home economics, ceramics, agriculture, forestry, the maritime service, eduation for medicine or teaching.

Governed by a Board of Trustees appointed by the Governor, State University of New York plans for the total development of State-supported higher education. Each unit of State University is locally administered, and students apply directly to the institution for admission.

State University was commissioned by the people of the State of New York to admit all qualified students regardless of race or color, creed or economic status. The current full-time undergraduate enrollment is about 21,000, with 6,000 in the community colleges.

The State University motto is: "Let Each Become All He Is Capable Of Being."

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GENERAL INFORMATION

CERAMICS

THE WORD CERAMICS is derived from the Greek word *keramos,* which means fired earth. To know ceramics fifty years ago was to know clays, shales, flints and feldspars, and to understand the methods involved in the manufacture of brick, tile, sewer pipe, terra cotta, pottery, and fire-clay refractories. During the years, ceramic technology has advanced greatly and with the advance has come a truer understanding of the principles involved in the manufacture of ceramic products and a fuller appreciation of the range of products made from fired earth. There is a continuing demand for ever better and special products, for items unheard of fifty years ago. In order to make refractories that would permit steel furnaces to operate at higher temperatures, glasses for special radio tubes, more durable cements, dielectrics for ultra-high-frequency currents, spark plugs for faster airplanes, linings for jet engines, and numerous other articles of timely importance, the ceramist has had to go back to nature and concern himself with practically all non-metallic minerals. He has to learn not only the geology and physical characteristics of minerals but also how minerals can be concentrated, freed from their impurities and/or purified so as to produce a material that can be economically and satisfactorily used in his product. The knowledge gained from studies of nature are leading him to an understanding of how to make artificial minerals. It is his concern to understand how to fabricate articles from non-metallic minerals, to understand the reactions that take place as such minerals and mixtures of such minerals are heated to increasingly higher temperatures, and to know the properties of the finished products.

The most durable products about or in the home are usually ceramic products: the brick on the outside; the mortar in which the brick are laid; the insulation in the wall; the cement in the foundation; the plaster on the wall; the tile on the room or the granules on the roofing shingles; the glass in the windows; the porcelain electric insulators; the tile on the bathroom floor and wall; the enamel on the stove, refrigerators, or washing machines; the sinks in the kitchen and bathroom; the bath tub; the dishes and glassware on the table; the refractory lining in the chimney; the tile on the basement floor; and the knife sharpener. Many ceramic products are basic to other industries: refractories to the metallurgical industry; electric porcelain to the automotive, airplane, electrical and radio industries; abrasives to the manufacturing industries; porcelain and glass to the chemical industry. All these items and many more are produced by the ceramic industry.

A person may study to be a ceramic engineer, a ceramic technologist, a glass technologist, or a ceramic designer. All have their particu-

lar places in the field and each brings something particular to the industry. The specific course to follow can be determined by a person's aptitudes and desires. Each of these courses is described in detail under the Departments of Instruction.

POLICIES

The policies of the College have been developed with reference to its principal function, the education of youth. Although students come to the institution for specialized training in ceramics, it is considered the duty of the College to make certain that the education received is one which prepares them for life as well as for a profession in ceramics. Courses are set up in such a manner as to present in logical sequence not only those fundamental and applied subjects so important to the ceramic engineer, ceramic designer, ceramic technologist or glass technologist, but also those subjects in the realm of humanistic-social studies which will aid the student in his association with society, will point out to him the important role he will be expected to play in society as well as his profession, and will make him a better citizen.

CAMPUS FACILITIES

THE COLLEGE OF CERAMICS is an integral part of Alfred University, and its students are students of Alfred University. In view of this, students of the College have available to them all the facilities provided by Alfred University. Among the most important of these facilities are Alumni Hall, an assembly hall used for dramatic production, student assemblies, moving pictures, commemorative exercises, concerts and Forum series; The Carnegie Library, containing over 65,000 volumes and providing reading and seminar rooms; The Clawson Infirmary, providing facilities for the treatment of student illnesses and staffed by two University doctors and by registered nurses; Kenyon Memorial Hall, providing a chapel and rooms for special meetings; The Merrill Athletic Field, equipped with large bleachers, floodlights and a field house; South Hall, containing a gymnasium for women and adjacent to tennis courts and archery range and flats for outdoor activities for women; the Susan Howell Social Hall, providing kitchen, dining room and reception room and available for special meeting purposes; the Track and Field House, containing an indoor track, a basketball court and a jumping and vaulting pit, besides training quarters, team rooms and showers, and used for large dances; and the Campus Union, a place to eat, relax and meet friends.

ORIENTATION WEEK

The first week of the College year is devoted to orienting the entering students into university life and into their scholastic work. Full

attendance by all freshmen and transfers is required. Instructional programs are provided by upper classmen and members of the faculty. Intelligence and aptitude tests are given. Private conferences with individual members of the faculty are provided. These more formal parts of the week's program are supplemented by amusements and "get-acquainted" meetings. The result is that by the end of the week, the "new" students are informed on what the College has to offer, what is expected of them, and how to go about getting adjusted to their new environment and bridging the gap between high school and college.

PLACEMENT

The College cannot guarantee employment of its graduates, but all members of the staff assist graduates in finding positions for which they are fitted. The wide contacts which the College and its staff enjoy with the whole ceramic industry result in the receipt of many inquiries for qualified persons. Graduating students who are considered to have the required qualifications for an open position are placed in direct contact with the persons interested.

Most of the positions which the graduates fill have to do with plant production, control of operations, research, industrial ceramic design, sales engineering, teaching and testing. All students are aided in finding the field of work for which they are particularly suited.

Salaries of graduates are on a par with those received in similar fields and vary greatly with the individual and the position. Advancement depends upon the ability to produce.

GRADUATE STUDY

In cooperation with the Graduate School of Alfred University the College of Ceramics offers advanced courses leading to the following degrees: Master of Science in Ceramic Engineering, Master of Science in Ceramic Technology, Master of Science in Glass Technology, and Master of Fine Arts.

Requests for information and formal application for admission to the Graduate School should be addressed to the Dean of the Graduate School, Alfred University, Alfred, New York.

TEACHING AND RESEARCH ASSISTANTSHIPS

Several graduate assistantships are available to worthy candidates. The holder of an assistantship must be a candidate for an advanced degree and he is expected to set up a program which will permit him to obtain his degree in two years. A graduate assistant is called upon to assist the members of the particular department with which he is associated in carrying on the work of that department. Applications for assistantships should be made to the Chairmen of the various departments. (See Faculty)

VETERANS

The benefits obtainable under the G. I. Bill of Rights and the Korean Benefits Bill are open to both men and women students according to degree of eligibility and amount of service. A veteran's adviser makes frequent visits to the campus for consultation.

THE FIELD OF CERAMICS

The ceramic profession is one of the oldest and one of the most challenging. It has need for qualifid persons who are willing to develop it further. Great advancements are possible, and these will be made by well-trained, imaginative persons. Nearly 1,000 are registered in American schools and colleges preparing themselves for careers in the ceramic profession while approximately 2,000 are gainfully engaged in it. In normal times approximately 200 are graduated into the profession, one-third of them being graduated from the New York State College of Ceramics. It is significant that normally only 200 are graduated yearly to enter a highly technical industry comprised of thousands of plants and turning out products valued in billions each year. The opportunities for ceramic graduates are great.

Contact with the industries of the State is maintained through the splendid cooperation afforded the College by the Ceramic Association of New York State, whose special committees assist college authorities in evaluating its teaching and research programs. Contact with other State agencies is maintained through active cooperation with the New York State Science Service and the New York State Department of Commerce.

Encouragement is given to participation in extra-curricular activities because it is known that through such participation a student has the opportunity to learn the effectiveness of cooperative work and to develop talents not brought out by regular course work. The value of a student's participation in religious fellowship, dramatics, athletics, and journalism is difficult to evaluate, but experience has shown that such activities not only add much to the student's outlook on life but also serve to develop confidence in areas outside his chosen field.

Staff proficiency is kept high by the encouragement given to participation in the affairs of educational and scientific societies, the establishment of direct contact with industry, direct association with research work, plant visitations, and advanced study.

Research is kept timely and alive by an active research and development program and the availability of exceptionally good equipment. Involving as it does studies of a fundamental scientific nature, studies in applied research, and studies concerning the utilization of New York State minerals, the program affords the student an opportunity to become acquainted with practically all types of ceramic research. This program, which is sponsored not only by the College, but also by industry, federal agencies and associations, brings to the campus leading industrialists and outstanding research workers. Research carried on by undergraduate and graduate students links the teacher, the researcher, and student in a valuable educational experience.

THE INSTITUTION

OBJECTIVES

CHAPTER 383 of the Laws of New York of 1900 stated that the purpose of the new institution at Alfred was "to give scientific, technical, art and practical training for the manufacture of all kinds of ceramic products and to conduct experiments in reference to the value for commercial purposes of clays and shales of New York State."

During the fifty-three years of its existence, the institution has kept its sights high. Its principal desire has been, and is, to afford students a program of progressive education and stimulating research which will prepare them to be good citizens as well as good ceramists.

LOCATION

The College is at Alfred University, Alfred, N. Y. The village of Alfred is in Allegany County, 74 miles south of Rochester, 12 miles southwest of Hornell, and 14 miles northeast of Wellsville. It is located on state highway 244, which, two miles east at Alfred Station, connects with state highway 36 and the main line of the Erie Railroad. Alfred, with a population of 2000, is situated at an elevation of 1800 feet.

HISTORY

The College had its beginning as the New York State School of Clay Working and Ceramics, which was established at Alfred University in 1900. Two men, Boothe C. Davis and John J. Merrill, visioning the promising position ceramic education was to take in the professional and industrial life of the nation, labored unceasingly for its establishment.

At the time the school was established there was only one other school offering specialized courses in ceramics, and together these institutions pioneered in the fields of ceramic education.

It was under the guidance of its first director, Charles Fergus Binns, and the then president of Alfred University, Boothe C. Davis, that the philosophy of the school was developed and the foundation laid for further growth. During the administration of Dr. Binns (1900-1931), the first school building (Binns Hall) was erected and enlarged, courses of instruction were developed, student registration increased from five to one hundred sixty-nine, the importance of ceramic education was proved, and plans for expansion of the school were developed.

In 1932, the school was renamed the New York State College of Ceramics, and its program expanded. A new building (Merrill Hall) was built and equipped.

Dr. Major Edward Holmes was appointed the first Dean of the College and served in that capacity from 1932 to 1946. During those

years Dean Holmes worked with Presidents Davis and Norwood in carrying the College forward. Under the direction of Dean Holmes, the engineering and technology courses were strengthened and broadened, the interest of state manufacturers was attracted to the College, the Ceramic Experiment Station was established (1936), and ground was laid for the development of a research program. The engineering curriculum is accredited by the Engineers' Council for Professional Development.

During the years of World War II, registration decreased but the research work of the College increased rapidly. The staff readjusted its efforts to care for the demands being placed on the College and made numerous contributions to the war effort.

Under the guidance of Dr. Samuel R. Scholes, who served as Dean from 1946 to 1948, provisions were made for handling the heavy research program and the record registration stemming from World War II, the engineering and technology courses were reviewed and reconstituted to include strengthened basic courses and courses in humanistic-social studies, impetus was given to further development in the ceramic design program, a reference library was established, appropriations were obtained for the erection of a grinding and clay-storage building, and positions were established for the purpose of strengthening work at the graduate level.

Binns Hall was torn down in 1950 and on its site a new class-room and laboratory, which was tied in with Merrill Hall, was built. Classes were held in the new building for the first time in September of 1953. This building was the outcome of plans laid in 1943, and is one of the finest and best equipped of its kind.

Ever since its beginning, the College, while contributing greatly to ceramic education, has been keenly aware of the developments taking place in education and of the advancements being made in science. Its administrators have been eager to bring to the students the benefits of the most progressive thinking in all phases of ceramics. As a consequence of this progressive attitude, the College, with its well qualified staff and exceptionally well-equipped laboratories, offers outstanding undergraduate and graduate courses in Ceramic Engineering, Ceramic Technology, Glass Technology and Design.

CONTROL

The College of Ceramics is a unit of the State University of New York and as such is under the general direction of the officers and Board of Trustees of that University. It is supported by annual appropriations of the Legislature. Because of the law which established the College in which certain powers were granted to Alfred University, it is known as one of the "contract" or "statutory" colleges within the State University.

The trustees of Alfred University have been entrusted with the responsibility of operating the College of Ceramics and they appoint annually a committee which acts in an advisory capacity in carrying on the affairs of the college. This committee is the Advisory Board of the College. The President of Alfred University serves as Chairman of the Advisory Board.

The immediate direction of the affairs of the College is carried out by the Dean.

BUILDINGS AND EQUIPMENT

The "Ceramics" building, in which most of the work of the College is carried on, is one of which the College is justly proud. This building, which was dedicated in June 1953, is known as "Binns-Merrill Hall." It is a quadrangle containing 70,000 square feet of working space especially designed and laid out to serve the particular needs of the College. Three-fourths of the building is new and the other fourth is "Old Merrill Hall," to which the new portion has been connected. The building and its equipment represent an outlay of approximately two million dollars and provide the finest and most complete facilities for ceramic education in the world.

Among many features possessed by this building are a well equipped library, excellent mineralogy laboratories, airy chemistry laboratories, special facilities for research and development, air-conditioned lecture rooms, bright drawing rooms and a 194-foot long kiln room two stories high.

A grinding and clay storage building was constructed in 1949. This concrete block building has been used for grinding and clay storage, but it is planned, with the moving of the grinding equipment to the new building, to use this building for a freshman plaster shop and as a laboratory in which pilot-plant work may be carried out.

The ceramic laboratories are equipped with modern apparatus and machinery needed for clay and mineral processing, body mixing and preparation, shaping and forming of ware, drying and firing of samples, and the testing of products and materials. The special laboratories such as those for chemistry, petrography, spectroscopy, and x-ray have excellent and adequate equipment. Besides the stationary equipment there are available the many small items of equipment and apparatus essential to special studies and research.

Much of the research work which is under the direction of the College staff is cared for in buildings owned by Alfred University.

LIBRARY

A highly important facility of the College is the ceramic reference library. Under the guidance of trained librarians, the students find

here a wealth of published material in all phases of ceramic engineering, technology, art, and design, as well as in the related sciences. Equipped with work tables and chairs, the library is open five days, five evenings during the week and at prescribed times over week-ends.

The number of bound volumes of art and technical books approximates 7500. In this number are not included unbound bulletins, reprints, pamphlets, and student theses. More than 200 periodicals are currently received on subscription.

Alfred University Library is also available to ceramic students. Its collection supplements effectively the ceramic library, particularly in humanistic-social subjects.

ADMISSION

It is the responsibility of the Committee on Admissions to select those candidates who have character, intelligence and purpose and who will profit most by the program offered by the College.

The Committee on Admissions meets at frequent intervals to consider applications and to review the scholastic records of candidates. Soon after a candidate's application has been considered, he or she is notified of the committee's action. Ordinarily the candidate is definitely accepted or rejected but in border-line cases decisions may be deferred until nearer the time of the opening of College.

Enrollment is limited and it is not possible to accommodate all qualified applicants. It is advantageous therefore to make application early, preferably before April 15.

PROCEDURE

Catalogs and application blanks may be secured by writing to the Director of Admissions. The application blanks consist of three forms:

Form I, application for admission, should be completed by the candidate in full and returned to the Director with a $5 application fee. This fee will not be refunded.

Form II, the official secondary-school transcript, is to be filled out by the secondary-school principal or counselor and mailed directly to the Director.

Form III is in duplicate. The family physician and one other person, not a member of the candidate's family, should complete these forms and mail them directly to the Director.

All candidates are required to take the Scholastic Aptitude Test of the College Entrance Examination Board. These tests are given at convenient locations throughout the world in December, January, March, April, May and August of each year. For full information as to location of tests, fees, sample examinations and scheduling for the examination, write The College Entrance Examination Board, Box 592, Princeton, New Jersey. It is preferred that the December or January tests be taken to facilitate early completion of the candidate's application for admission.

A personal interview is an important part of the admission procedure. The candidate should make an appointment with the Director of Admissions to visit the Alfred University campus and to meet the Dean of the College of Ceramics.

ENTRANCE REQUIREMENTS

1. The basic requirement for admission to the College is graduation from an accredited secondary school. The candidate is expected

to rank in the upper portion of his class and to present a total of 16 units, including English, 4 units; mathematics, 2½ units, science, 2 units, and electives, 7½ units.

The unit represents a course of five recitations per week throughout the school year. Since, in the total of 16 units, four years of English are counted as four units, a total of 15 units will be accepted from states in which four years of English are counted as only three units.

ENGLISH — 4 units.

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.

MATHEMATICS — 2½ units.

Elementary and intermediate algebra, including fundamental operations, factoring, fractions, ratio, proportion, radicals, quadratics; plane geometry, including the straight line, angle, circle, proportion, similarity and areas.

SCIENCE — 2 units.

Biology, general science, physical geography, physics or chemistry. Any two subjects may be offered.

ELECTIVES — 7½ units.

Electives may be chosen from any of the regular high school subjects such as foreign languages, social sciences, mathematics or natural sciences. One or two units may also be chosen from each of the following, but not more than four units may be chosen from these subjects altogether: agriculture, domestic science, commercial subjects, drawing and design, industrial arts, music, public speaking, and dramatics.

Admission to the Department of Design is governed by substantially the same requirements as those for Technology and Engineering, but high school art work, if of superior quality, may be substituted to a limited extent for some of the requirements listed above.

The majority of applicants comply in full with the unit requirements. In exceptional cases where evidence of high scholarship is presented, applicants may be given the opportunity to make up certain deficiencies in summer sessions or by taking entrance examinations. Application for such an examination, which is given only during the first week of the fall semester, must be made not later than July 1.

SPECIAL REQUIREMENTS

After applicants are found to meet the general requirements stated above, the Admissions Committee proceeds to consider them as potential candidates for the next entering class. These deliberations are made on an individual basis with careful attention to the following considerations.

1. *Scholarship.* Experience has shown that high school students who rank low scholastically rarely make a success of their ceramic education. It is the policy of the institution, therefore, to reject the applications of all students who do not have a good high-school scholastic record.
2. *Adaptability.* In addition to general scholastic ability, adaptability to the special requirements of a ceramic education are required. Applicants for admission to the Design Department should, by a personal interview or by submitting exhibits of their high-school art work, show satisfactory evidence of adaptation to art work. This may be done either before or after they make formal application for admittance.
3. *Interest.* Evidence of special interest in gaining a ceramic education of the kind offered by the New York State College of Ceramics, and absence of too absorbing an interest in other fields of education, will influence the committee in making its decisions.
4. *Personal qualities.* Personal traits of character, such as initiative, industry, appearance, honesty, originality, and resourcefulness are given due consideration.
5. *Likelihood of continuing through the four-year course.* It is necessary to refuse admittance to applicants who want to enroll in the College and transfer to another institution before completing the course. Admittance may also be refused in cases where the applicant cannot make satisfactory financial arrangements.
6. *Age, character and health.* Applicants must be at least sixteen years of age, of good moral character, and possessed of health which permits them to do satisfactory work. All entering students must have a physical examination.
7. *Date of application.* The choice between applicants who equally meet the foregoing requirements will be determined by the date of application.
8. *Interviews.* It is highly desirable for each candidate to present himself at the College for an interview with the Dean, and, if possible, with other members of the Admissions Committee. Interviews will be much more profitable if, at least several days before them, the applicant's credentials, particularly the certificate of recommendation conveying the high-school record, have been received by the College officers. Appointments for interviews should be made several days in advance by writing to the Director of Admissions.

ADMISSION TO ADVANCED STANDING

Students in other approved institutions may transfer to the College. Their admittance is subject to the following regulations:

1. They must supply a statement of their entrance units and date of graduation from high school, a transcript of their college record, a letter of honorable dismissal by the proper official, and a statement that they are eligible to return to the institution which they are leaving.
2. Credit will be granted for equivalent courses in which the grades are C or higher. No credit is given for grades of D or lower.
3. Transfer students are subject to the same standards of selection as entering freshmen.

SPECIAL STUDENTS

It is not the policy of the institution to encourage the enrollment of special students who are not candidates for a degree. Disappointment, both to the institution and the student, usually results from this arrangement. However, in special cases where the applicant is of mature age, and of extraordinary ability, arrangements may be made for admittance as a special student.

REQUIREMENTS FOR DEGREES

Graduation depends upon successfully completing the prescribed courses of study with a grade-point index of 1.00 or more. No substitutions for the prescribed courses are permitted, but by means of the elective courses, some degree of variation in the curriculum to meet the individual wishes of the student is possible. The College reserves the right to withhold a diploma for poor scholarsip or other reasons.

BACHELORS DEGREES

The degree of BACHELOR OF SCIENCE (B.S.) is awarded to those students of the Department of Ceramic Engineering and the Department of Glass Technology, who successfully complete the prescribed courses of study in these departments with scholastic cumulative grade-point indices of 1.00. The department in which the student majored is stated on the diploma.

The degree of BACHELOR OF FINE ARTS (B.F.A.) is awarded to those students who successfully complete the prescribed courses of study in the department of Design with a scholastic cumulative grade-point index of 1.00.

The degree of MASTER OF SCIENCE (M.S.) is awarded to graduate students who successfully complete the thirty-six hours of prescribed graduate studies and submit an approved research thesis. (See Graduate Studies)

The degree of MASTER OF FINE ARTS is awarded to graduate students who successfully complete the thirty-six hours of prescribed graduate studies and submit an approved thesis. (See Graduate Studies)

A minimum of one year's residence is required for all degrees in course.

MASTER OF SCIENCE DEGREE

To be eligible for general admission an applicant must have received a Bachelor of Science degree from a recognized institution and must present evidence of (a) his ability to carry on work at the graduate level, (b) sound character, (c) better than average scholarship in his undergraduate work.

Science graduates of the Ceramic College or others with equivalent preparation may earn the Master of Science degree in one or two years, depending upon the program decided upon.

The programs of students coming from other institutions may differ considerably from those of graduates of the College of Ceramics. Where the Bachelor's degree was obtained in a field other than ceramics, students will be required either: (1) to take undergraduate courses in those subjects necessary to bring their backgrounds up to

the level required for graduation from this College, or (2) to pass a comprehensive examination after suitable independent study, before they may become candidates for the Master of Science degree. More than one year will be required in such cases.

Courses marked with an asterisk in this catalogue are accepted for graduate credit. In order to obtain graduate credit for those courses which are normally undergraduate courses, students must (1) prepare an acceptable term paper, (2) pass an oral examination in the subject.

Due consideration will be given to graduate work done elsewhere. However, transferred credit must be of grade B or better, and it will not reduce the time of residence.

Generally, the Master of Science degree is evidence that the holder possesses a maturity and grasp of his major subject well beyond that of one having the bachelor's degree; that he is able, not only to read and study independently, but also to understand and apply the literature of his field.

Written application for admission to candidacy must be made by the student to the Dean of the Graduate School not later than three months before the date of graduation.

To become a candidate for the Master's degree a student must satisfy the Committee on graduate studies that he has met the following preliminary requirements.

(1) The satisfactory completion of 18 semester hours of acceptable courses, including not more than 9 hours of thesis work.

(2) At least one semester in residence with graduate standing.

(3) The completion of any non-credit prerequisites specified at the time of registration for graduate study.

(4) A grade-point index of at least 2.00 for courses completed and forming a part of the student's program.

(5) Acceptable performance on any qualifying or comprehensive examination required.

(6) Satisfactory progress on thesis, if it has formed a part of the student's program.

The complete requirements for the degree are:

(1) At least one year of residence (work must be completed within a period of three years).

(2) Thirty-six semester hours of study including thesis. The thesis may count for not more than 18, nor less than 12 of the required hours. Not more than 12 credit hours may be taken outside the candidate's field of specialization.

(3) A completed thesis based on original experimental work, on an approved subject, and so written as to be suitable for publication.

(4) Successful performance during a two-hour oral examination in the candidate's major field.

MASTER OF FINE ARTS DEGREE

Interested persons are requested to write directly to the Chairman of the Design Department prior to making formal application. If at all possible, an interview will be arranged. Formal application must be made to the Dean of the Graduate School prior to acceptance.

The prerequisites for graduate study toward the Master of Fine Arts degree are: (1) the Bachelor of Fine Arts or Art Education or, (2) the Bachelor of Arts degree with a major in Fine Arts or Art Education or, (3) the Bachelor of Arts degree with the equivalent of fifty semester hours of professional art training in a recognized institution.

Credit and residence requirements for the Master of Fine Arts degree can be completed in two semesters, but graduate students who have not had sufficient undergraduate technical courses should plan on a longer period of study in order to complete the full requirements.

To be eligible for general admission an applicant must have received his degree from a recognized institution and must furnish evidence (a) of having ability to carry on work at the graduate level, (b) of sound character, (c) of better than average scholarship in his undergraduate work.

The programs of transfer students will differ considerably from those of students graduating with a Bachelor of Fine Arts degree from the College of Ceramics. Where the Bachelor's degree was obtained in a field other than ceramics, students will be required either: (1) to take undergraduate courses in those subjects necessary to bring their backgrounds up to the level required for graduates from the College of Ceramics or (2) to pass a comprehensive examination after suitable independent study, before they may become candidates for the Master of Fine Arts degree.

Due consideration will be given to graduate work done elsewhere. However, transferred credit must be of grade B or better and it will not reduce the time of residence.

Generally, the Master of Fine Arts degree is evidence that the holder possesses a maturity and grasp of his major subject well beyond that of one having the Bachelor's degree; that he is able, not only to read and study independently, but also to understand and apply the literature of his field.

Written application for admission to candidacy must be made by the student to the Dean of the Graduate School not later than 6 months before the date of graduation.

To become a candidate for the Master's degree, a student must satisfy the Committee on Graduate Studies that he has met the same preliminary requirements as those already outlined for the degree of Master of Science. The complete requirements for the degree are also the same, except that four years is allowed for the completion of the work, and the thesis is not necessarily written for publication. The final examination may differ in form.

TUITION FEES AND EXPENSES

TUITION

Legal residents of the State of New York pay no tuition. All students who are not legal residents of the State pay tuition of $150 per semester, in addition to all other fees and expenses.

No person is considered eligible to register as a resident of the State of New York unless he has been a *bona fide* resident in New York for the six consecutive months next preceding the date of his enrollment. No person shall be considered to have gained or lost his residential status in this State for the purpose of registering by any conduct of his own while he is a student in the College, unless, after attendance at the College for one year, it can be clearly established by the student that his previous legal residence has been abandoned and a new one established in New York for purposes other than merely attending the College.

The residence of a minor follows that of parents or legal guardian, regardless of emancipation. The residence of a wife follows that of her husband. Any student whose residence thus follows that of another person, and who has not been a resident for the six months immediately preceding marriage or assignment to a guardian, cannot be considered to have gained residence until the full six-month period has elapsed.

FEES

Fees are charges made which are non-returnable and the college reserves the right to charge fees without notice.

A general fee of $50 each semester is charged to care for ceramic laboratories, plant trip, library, campus tax, student year book, student branch of American Ceramic Society, athletics, the college paper, University Forum, and infirmary service.

All chemistry courses (with laboratories), all physics courses (with laboratories) and geology courses carry laboratory fees of $15 to cover breakage of equipment. A fee of $10 is charged in connection with the course in surveying to cover breakage of equipment.

Special service fees are charged as follows:

(1) An application fee of $5 to cover the cost of processing an application.

(2) A special test fee of $1 is charged to cover the costs of various ability and capability tests.

(3) A special examination fee of $5 is charged a student for taking a test or examination which he or she has missed.

(4) A late registration fee of $5 is charged to cover the cost of processing registrations which are not made during the prescribed times.

DEPOSITS

Deposits are those monies paid from which some return may be expected. The deposit charges are as follows:

A pre-registration charge of $25 is made to assure the college of the student's sincerity in registering in college. This deposit is refunded upon graduation or at the time of leaving school, providing the student follows the prescribed rules for discontinuing his program.

Chemistry breakage deposits are required in all chemistry courses. This is made to cover the cost of the specific items which a student breaks and the amount returned will depend upon the value of the items which a student breaks. The fees amount to $10 in Chemistry 1 and Chemistry 5, and $15 for each other chemistry course.

All students in Design make a deposit of $40 to cover the cost of art supplies needed in their work. The amount the student receives back as a refund will depend on the cost of the items he or she has received from the stockroom.

DORMITORY EXPENSES

Dormitory Room Deposit, each year..... $10.00

The room deposits must be paid in advance at the time the room is reserved. This is not a part of the room rental. In case a student fails to occupy a room so reserved, the deposit is forfeited. Upon surrender of the room in good condition at the close of the school year, the deposit will be refunded to the student.

Dormitory Room Rentals, Per Semester:

In the Brick or Bartlett Dormitory..... $100.00
In Burdick Hall, for upperclassmen..... 50.00

Prices in all cases are per person. All rooms are completely furnished. Students are to supply their own towels, bed linen and blankets.

Board in Dormitory Dining Hall, Per Semester:

In The Brick or Bartlett Dormitory..... $200.00

Residents of these two dormitories are required to board in the dining halls connected therewith. No credits or rebates for absences are allowed on board bills. The charges for board and room in dormitories will be in effect unless cost of food and labor or new forms of taxation make it necessary for the University to increase them. If and when such increases are made, they will become effective at the beginning of the following semester.

TERMS OF PAYMENT

Tuition and other regular charges are billed at the beginning of each semester, during the process of registration. These bills cover the semester charges for tuition, laboratory and other fees, also room rental and board if the student rooms in a University dormitory.

Semester bills are due when issued and must be paid, or definite and satisfactory arrangements made at the Treasurer's Office for payment, before the student is eligible to attend classes.

Some students and parents prefer to pay tuition, room, board, and fees on a time-payment basis. Tuition Plan, Inc., of which Alfred University is a participating member, provides a method by which parents and guardians may pay tuition and other fees in eight equal monthly installments during the academic year. This corporation applies to education the accepted and well established methods of deferred payments familiar in other fields. Tuition Plan, Inc., charges 4% interest on money borrowed for college expenses.

REFUNDS

No refunds on acount of tuition and fees will be allowed if the student withdraws after the 5th week of the semester. However, refunds on deposits will be made.

A student withdrawing before the middle of the semester because of serious illness or other good and sufficient reason, may be granted a refund by the Treasurer of the University, the amount of such refund, if any, to be determined after full investigation of the circumstances. Board and room charges will be refunded on a pro-rata basis.

All other refunds will be made according to the following schedule:

Week of registration.....	100% refund
First week after registration.....	80% refund
Second week after registration.....	60% refund
Third week after registration.....	40% refund
Fourth week after registration.....	20% refund

No refund after fifth week (including registration week)

A special refund and credit policy has been formulated to protect those called into military service.

ESTIMATE OF EXPENSES

TOTAL EXPENSES for students who are legal residents of the State of New York, for the two semesters of the college year, exclusive of personal expenditures, such as transportation, clothing, recreation, etc., may be estimated as follows:

	— In — University Dormitories		With Private Families or in Clubs	
Board	$400	$400	$300	$400
Room	100	200	100	170
Inclusive College Fee	100	100	100	100
Deposits	17	25	17	25
Books, etc.	30	40	30	40
	$647	$765	$547	$735

Out-of-state students can compute comparable budgets by adding to each of the columns $300 for tuition.

Freshmen are required to live in the dormitories, unless excused for a compelling reason. By doing so, they have the services of upperclass counselors and the advantage of living with one another. Most upperclass students live in private homes, clubs, fraternities or sororities.

All freshmen in the Engineering and Technology courses are required to take Mathematics 21S, Plane Surveying, which is given during the three weeks immediately following Commencement. Students who take this course make their own arrangements for board and room during that period. Surveying must be taken during the intersession immediately following the freshman year.

PROGRAMS OF STUDY

The courses of instruction have been developed to satisfy the needs of the ceramic industry. Designers are needed to create shapes or forms, to select and develop colors, and to maintain standards in decoration. Technologists are needed to maintain quality and to further the understanding of the principles underlying the manufacture of ceramic products, whether in the area of fine china, building brick or refractories. Engineers are needed to work with people, money and machines for the purpose of producing ceramic wares.

Corresponding with these industrial needs are the three departments: Ceramic Engineering, Glass Technology, and Design. Students may take all three courses, but to do so would require at least seven years' work. If a student expects to graduate in four years he must choose one of these areas in which to specialize. The choice must be made when he enters college, if it is to be design. The choice between technology and ceramic engineering may be delayed until the end of the sophomore year, for the work of the first two years is the same for engineers and technologists.

The program for R.O.T.C. students will be reviewed at the end of the Sophomore year and suitable adjustments made for the Junior and Senior years.

CERAMIC ENGINEERING

A ceramic product is one made from non-metallic, earthy, raw materials by a firing operation. With the exception of those made of glass, ceramic products are fundamentally similar. It is possible, therefore, to give a student a broad fundamental training in ceramics that fits him for usefulness in any of the divisions of the industry. His career in the industry will be determined by his aptitude in laboratory research and development, for plant production or for sales engineering. The college training is designed to give him the foundation on which to build.

In addition to a general cultural development, the department provides for a thorough grounding in the fundamental sciences of mathematics, chemistry, and physics. Most of the first two year's work is devoted to these subjects. The last two years of the course are devoted primarily to the application of these fundamental sciences to the technical and engineering aspect of the ceramic industries.

The work of the ceramic engineer is usually the manufacture of ceramic ware. Although he may find work in research or sales, the ceramic engineer is primarily a production man. For this reason, the subjects of mathematics, mechanics, strength of materials, and equipment design and plant layout are emphasized.

The program is fully accredited by the Engineers' Council for Professional Development. Graduates are eligible for licensing as professional engineers after they have had the necessary industrial experience.

This program leads to the degree of Bachelor of Science (B.S.).

CERAMIC ENGINEERING CURRICULUM

First Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Mathematics 5 (College Math.)	5	Mathematics 6 (College Math.)	5
Chemistry 7 (General Inorganic)	5	Chemistry 8 (Qual. Analysis)	5
Industrial Mechanics 1 (Eng. Draw.)	3	Industrial Mechanics 2 (Desc. Geom.)	3
English 1 (Composition)	3	English 2 (Composition)	3
Ceramics 101 or 151 (Introd.)	1	Ceramics 102 or 152 (Introd.)	1
Physical Education or Military Science and Tactics	1	Physical Education or Military Science and Tactics	1
Assembly	0	Assembly	0
	18		18

Summer Term of three weeks following close of second semester:
Mathematics 21 (Plane Surveying) ..... 3 credit hours

Second Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Mathematics 15 (Calculus)	4	Mathematics 16 (Calculus)	4
Chemistry 13 (Quant. Anal.)	3	Chemistry 40 (Physical Chem.)	3
Physics 11 (General Physics)	4	Physics 12 (General Physics)	4
Geology (Structural)	3	Mineralogy (Introd. & Cryst.)	3
Ceramics 103 (Unit Operations)	3	Ceramics 104-104A (Raw Materials)	4
Physical Education or Military Science and Tactics	1	Physical Education or Military Science and Tactics	1
Assembly	0	Assembly	0
	18		19

*Summer term of three weeks following close of semester.
Ceramics (special fields) ..... 3 hrs. credit

Third Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Physics 37 (Mechanics)	4	Physics 38 (Strength of Materials)	4
Chemistry 41 (Physical Chem.)	5	Chemistry 44 (Advan. Quan.)	3
Chemistry 43 (Fuels & Combustion)	3	Petrography (& Instrumentation)	4
Ceramics 105 (Unit Processes)	4	Ceramics 106 (Glasses, Glazes, Enam.)	4
English 35	2	Civilization 22 (Eng. Indoct.)	3
	18		18

*Summer term of three weeks following close of semester.
Ceramics (special fields) ..... 3 hrs. credit

Fourth Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Physics 31 (Heat)	3	Physics 34 (Mag. & Elec.)	3
Economics 11 (Prin. & Prob.)	3	Economics 12 (Prin. & Prob.)	3
Ceramics 107 (Testing of Prod.)	2	Ceramics 122-72 (Plant Layout)	5
Ceramics 121 (Structural Plan.)	2	Ceramics 162 (Thesis)	2
Ceramics 161 (Thesis)	2	Ceramic Elective	3
Ceramic Elective	3	Non-Technical Elective	3
Non-Technical Elective	3		
Plant Inspection	1		
	19		19

*Regular students will be expected to attend the intersession course after the Sophomore year or the intersession course after the Junior year.

R.O.T.C. students must take the intersession course after the Sophomore year.

GLASS TECHNOLOGY

Glass differs from other ceramic products in two essentials: the firing operation is carried to complete fusion, and the forming process follows the furnace treatment instead of preceding it. Glass is related to other ceramic bodies, because all glasses are made up of oxides, among which silica predominates. The glazes and enamels are glasses formed in place on the surfaces which they protect and ornament. Ceramic bodies such as pottery or porcelain owe their strength to a glassy bond which holds their crystallized minerals together.

The purpose of the curriculum in glass technology is to prepare the graduate for usefulness in the glass industry or in related fields. The student necessarily spends most of his time upon fundamental sciences, mathematics, physics, and chemistry. The application of these sciences to an industry constitutes technology. The course is identical with Ceramic Engineering for the first year.

In his specialization, the student deals with the raw materials for glass and the behavior of its constituent oxides, particularly their high-temperature chemistry. He learns how to analyze glasses, and how to design and calculate compositions for various purposes; he studies fuels and furnaces and acquires experience in glass-melting on a laboratory scale; he does not become a glassworker, but he learns the principles of the art; he finds out how glassware is annealed and gives a great deal of his time to the classroom and laboratory study of its physical properties; he becomes acquainted with the fascinating subject of colored glasses, in theory and practice.

Because clay is important in building the furnaces and containers in which glass is melted, certain courses in ceramic technology are included in this curriculum.

The department offers an opportunity for research in glass to those who are adequately prepared by college or plant experience. Glass manufacturers are invited to send their employees for further training and to establish fellowships for the study of special problems.

Students who exhibit unusual promise as they reach junior year will be given opportunity to prepare for graduate study by acquiring reading knowledge of a foreign language. Certain deviations from the prescribed courses will be allowed to suit the preference of upperclassmen who may wish to emphasize particular phases of their training.

This program leads to the degree of Bachelor of Science (B.S.).

First Year

Identical with first year of Ceramic Engineering Program.

Second Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Mathematics 15 (Calculus)	4	Mathematics 16 (Calculus)	4
Chemistry 13 (Quant. Anal.)	3	Chemistry 40 (Physical Chem.)	3
Physics 11 (General Physics)	4	Physics 12 (General Physics)	4
Ceramics 103 (Unit Operations)	3	Ceramics 200 (Raw Materials)	3
Geology (Structural)	3	Mineralogy (Introd. & Cryst.)	3
Physical Education or Military Science and Tactics	1	Physical Education or Military Science and Tactics	1
Assembly	0	Assembly	0
	18		18

*Summer term of three weeks following close of semester.
Ceramics (special fields) ..... 3 hrs. credit

Third Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Physics 37 (Mechanics)	4	Physics 38 (Strength of Materials)	4
Chemistry 41 (Physical Chem.)	5	Petrography (& Instrumentation)	4
Ceramics 201 (Glass; Comp.)	5	Ceramics 202 (Glass Properties)	5
Ceramics 251 (Glass Analysis)	2	Ceramics 252 (Glassmelting)	2
Chemistry 43 (Fuels & Comb.)	3	Physics 32 (Light)	3
	19		18

*Summer term of three weeks following close of semester.
Ceramics (special fields) ..... 3 hrs. credit

Fourth Year

First Semester	*Hrs.*	*Second Semester*	Hrs.
Physics 31 (Heat)	3	Non-technical Elective	3
Differential Equations	2	Statistics	3
Ceramics 261 (Thesis)	2	Ceramics 262 (Thesis)	2
Non-Technical Elective	3	Plant Inspection	1
Economics 11 (Prin. & Prob.)	3	Economics 12 (Prin. & Prob.)	3
Elective	5	Elective	5
English 35	2		
	18		19

*Regular students will be expected to attend the intersession course given after the Sophomore year or the intersession course given after the Junior year.

R.O.T.C. students must attend the intersession course given after the Sophomore year.

CERAMIC TECHNOLOGY

The course in Ceramic Technology differs from the course in Ceramic Engineering in but one respect. In Ceramic Technology, subjects generally accepted as technological in character have been substituted for the engineering subjects in the engineering curriculum. There is an active demand by the ceramics industries for graduates to serve as scientists and technologists in addition to the demand for engineers. The department provides for the education of students as scientists and technologists.

As in the Ceramic Engineering course, a thorough grounding in mathematics, chemistry, and physics is given. This is followed by increased emphasis on both scientific subjects and specialized ceramic courses stressing the application of the fundamental sciences to the technical problems of the ceramic industries.

The course is identical with Ceramic Engineering for the first two years. Thereafter, certain courses regarded as fundamental are required, but certain options will be allowed. Students whose scholastic records indicate that they would succeed in graduate study may take one or two foreign languages, additional chemistry, and more mathematics. Those who show a decided preference for particular branches of ceramics will be allowed more intensive specialization in those subjects.

This program leads to the degree of Bachelor of Science (B.S.).

CERAMIC TECHNOLOGY CURRICULUM

Third Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Chemistry 41 (Physical Chem.)	5	Chemistry 44 (Silicate Anal.)	3
Chemistry 43 (Fuels & Comb.)	3	Petrography (& Instrumentation)	4
Ceramics 105 (Unit Processes)	4	Ceramics 106 (Glasses, Glazes, Enam.)	4
Mathematics 101 (Diff. Equat.)	2	Mathematics 102 (Diff. Equat.)	2
Technical Elective	3	Technical Elective	2
English 35	2	Civilization 22 (Eng. Indoct.)	3
	19		18

*Summer term of three weeks following close of semester.
Ceramics (special fields) ..... 3 hrs. credit

Fourth Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Physics 31 (Heat)	3	Physics 34 (Mag. & Elec.)	3
Economics 11 (Prin. & Prob.)	3	Economics 12 (Prin. & Prob.)	3
Ceramics 107 (Testing of Prod.)	2	Ceramics 162 (Thesis)	2
Ceramics 161 (Thesis)	2	Ceramics 124 (Adv. Cer. Tech.)	2
Ceramics 123 (Adv. Cer. Tech.)	2	Non-Technical Elective	3
Ceramics 125 (Thermo. Min.)	1	Technical Elective	5
Advanced Petrography	2		
Non-Technical Elective	3		
Plant Inspection	1		
	19		18

*Regular students will be expected to attend the intersession course given after the Sophomore year or the intersession course given after the Junior year.

R.O.T.C. students must attend the intersession course given after the Sophomore year.

DESIGN

The Design Department provides specialized professional training in ceramic design. The ceramic specialization begins in the third year of training and is based upon a two year preliminary program of study and experience with the broad subject of creative design as a whole. As the student progresses, a parallel study of technical subjects together with practical experience in producing finished ware helps him to relate his ideas to professional practice. Another group of courses in the humanities and in the history and philosophy of design contribute to his general education. Graduates earn the degree of Bachelor of Fine Art.

For the first two years the student studies the fundamentals of three dimensional and graphic design, color, free hand and instrumental drawing, and modeling. Design instruction is approached from an abstract basis, and many materials, processes and methods of working are explored. The preliminary program also includes courses in History, English, Art History and in Sociology or Psychology.

Junior students begin work in pottery shops and laboratories where their study of design expands into problems of function, and the technical study of materials. Individual experiments with processes and methods of making point the way to design solutions for various levels of production, and the colors, textures and behavior of glasses and clays become a part of the student's design vocabulary.

From the departmental courses listed for the third and fourth years advanced students must complete a minimum of forty-four credit hours from those listed on the opposite page. The remaining hours may be taken in the department or may be selected from a pattern of electives outside the major field of specialization. This arrangement allows each student to plan an individual program according to his interests and aptitudes. A grade point index of 1 in departmental courses is required for admission into the junior year. Students who wish to take special preparation for art teaching positions in secondary schools must first secure faculty approval, and must have a freshman-sophomore grade point index of 1.7. A total of 144 credit hours is required for graduation. The college reserves the right to retain selected examples of student work. Freshmen enrollment is limited to twenty-five students, and preference is given to applicants whose high school scholastic record places them in the upper third of their graduating class, and/or who show evidence of exceptional ability for creative design.

CERAMIC DESIGN CURRICULUM

First Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Ceramics 321 (Drawing)	2	Ceramics 322 (Drawing)	3
Ceramics 323 (Design)	4	Ceramics 324 (Design)	3
Ceramics 323A (Design)	2	Ceramics 324A (Design)	2
Ceramics 325 (Sculpture)	2	Ceramics 326 (Sculpture)	2
Civilization I (History-English)	6	Civilization II (History-English)	6
Mechanical Drawing	2	Mechanical Drawing	2
Physical Education or Military Science and Tactics	1	Physical Education or Military Science and Tactics	1
Assembly	0	Assembly	0
	19		19

Second Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Ceramics 327 (Drawing-Painting)	3	Ceramics 328 (Drawing-Painting)	2
Ceramics 329A (Design)	4	Ceramics 330A (Design)	3
Ceramics 329 (Design)	2	Ceramics 330 (Design)	2
Ceramics 331 (Sculpture)	2	Ceramics 332 (Sculpture)	3
Ceramics 301 (Art History)	1	Ceramics 302 (Art History)	1
Ceramics 305 (Ceramic Chemistry)	2	Ceramics 306 (Ceramic Raw Materials)	3
Psychology	3	Psychology or Sociology	3
Physical Education or Military Science and Tactics	1	Physical Education or Military Science and Tactics	1
Assembly	0	Assembly	0
	18		18

Third Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Ceramics 333 (Design)	2	Ceramics 334 (Design)	2
Ceramics 335 (Industrial Design)	3	Ceramics 336 (Industrial Design)	3
Ceramics 335A (Ceramic Design)	2	Ceramics 336A (Ceramic Design)	2
Ceramics 337 (Production)	4	Ceramics 338 (Production)	4
Ceramics 337A (Sculpture)	2	Ceramics 337A (Sculpture)	2
Ceramics 307 (Materials)	3	Ceramics 308 (Ceramic Color)	3
Ceramics 303 (Art History)	2	Ceramics 304 (Art History)	2

Fourth Year

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Ceramics 339 (Drawing-Design)	2	Ceramics 340 (Drawing-Design)	2
Ceramics 341 (Design)	2	Ceramics 342 (Design)	2
Ceramics 341A (Ceramic Design)	2	Ceramics 342A (Ceramic Design)	2
Ceramics 343 (Design & Prod.)	4	Ceramics 344 (Design & Prod.)	4
Ceramics 343A (Sculpture)	2	Ceramics 344A (Sculpture)	2
Ceramics 345 (Methods)	2	Ceramics 346 (Methods)	2
Ceramics 309 (Equipment and Plant Design)	2	Ceramics 310 (Equipment and Plant Design)	2
Elective	6	Elective	6

DEPARTMENT OF RESEARCH

The College of Ceramics regards research and development as being essential to good instruction of both undergraduate and graduate students. Therefore, it maintains an active research department which works closely with the undergraduate and graduate students. Even though research is the primary departmental function, it is closely associated with the instructional program of the College of Ceramics. The staff members of this department direct research projects at the undergraduate and graduate levels, act in a consulting capacity on sponsored projects, teach courses and carry on original investigations.

The demand for personnel trained in research methods and attitude is today greater than ever before. The acquisition of skill in applying knowledge by the undergraduate who works out a research problem is highly important. In directing research problems, the staff endeavors to develop this ability in the student.

The Research Department now conducts several programs sponsored by government agencies. These include the Air Force, Office of Naval Research (Material Branch), Office of Naval Research (Physics Branch), and Office of Flight Research. These programs deal with high-temperature materials for use in power-plant application; fundamental studies of ceramic-metal (cermet) compositions including thermal shock, thermal diffusivity, oxidation and phase studies; metal diffusion in carbides and phase studies in metal-carbide systems; and fundamental studies of ferrites.

A study of the mineral resources of New York State is in progress, in cooperation with the Science Service Division of the New York State Museum and the New York State Department of Commerce. This will make available to industry much needed information regarding New York State resources. Recently a book describing the clays and shales has been published. The program is continuing with a survey of the limestones. A field party is maintained during the summer months. Analytical and testing work is done during the winter months in the department's laboratory.

A considerable amount of sponsored industrial research is conducted in the department. Three types of programs are available. Undergraduate, graduate and full-time projects are now in operation. The type depends entirely on the purpose and scope of the investigation required.

Fellowships are often maintained by associations of manufacturers such as the Hudson River Brick Manufacturers, who maintain a research laboratory at Kingston, New York, where they support an active research program on the manufacture of soft-mud brick. The Structural Clay Products Research Institute sponsors a program on efflorescence in structural clay products.

Other research carried on in the department includes such projects as (1) surface tension effects in glass, (2) efflorescence of mortars, (3) grinding and polishing of glass, (4) particle-size studies, (5) differential thermal analysis of ceramic raw materials, (6) glaze studies, (7) Portland Cement, (8) utilization of waste materials such as fly-ash.

The Research Department is fortunate in having the close cooperation of the Ceramic Association of New York. The Research Committee of this organization acts as an advisory committee, whose recommendations are most helpful in organizing and planning the department's program. Through this organization, the department obtains the advice of the leading ceramic industrialsts of the State and the active cooperation of their companies.

INDUSTRIAL FELLOWS (Assistants)

Various ceramic industries, groups of industries, organizations and Federal agencies sponsor research fellowships at the College. Some of these fellowships are held by seniors and graduate students on a part-time basis, whereas others are held by full-time research fellows. Salaries are commensurate with the experience and ability of the fellow and with the time that is devoted to the project on which he is employed. Full-time industrial fellows and research associates are permitted to take a maximum of eight semester-hours of courses per year.

COURSES OF INSTRUCTION

CERAMIC ENGINEERING

101–102. A BRIEF HISTORY OF THE CERAMIC INDUSTRIES.
One lecture per week.
One credit hour, each semester.

103. UNIT OPERATIONS.
The engineering aspects of typical and fundamental operations in each of the ceramic industries.
Three lectures per week, first semester.
Three credit hours.

104. RAW MATERIALS.
The raw materials for all ceramic industries are considered: winning, refining, processing, properties, including behavior in firing and use in manufacturing: calculations.
Three lectures per week, second semester.
Three credit hours. Prerequisite, Ceramics 103.

104A. RAW MATERIALS LABORATORY.
A study of the basic physical properties of clays and their relationship to drying and firing operations.
One laboratory period per week, second semester.
One credit hour.

105. UNIT PROCESSES.
The fundamental considerations of plastic, slip-casting, and dry-pressing processes; drying and firing; effects of grain size and particle distribution; application to unit operations.
Three lectures and one laboratory period per week, first semester.
Four credit hours.

106. GLAZES, GLASSES, AND ENAMELS.
Fundamental studies of the glassy state, followed by applications to the industries producing glazed ceramic ware, glassware, and enameled ware. Colors, compositions; methods of calculation.
Three lectures and one laboratory period per week, second semester.
Four credit hours.

107. TESTING CERAMIC PRODUCTS.
Lectures, laboratory work, and demonstrations on instruments and methods, and practice in testing commercial ceramic products.
Two credit hours.

*108. STRUCTURAL CLAY PRODUCTS.
Specialization in the technology and the engineering aspects of the structural-clay-products industry.
Two lectures per week, second semester.
Two credit hours.

*109. WHITEWARES.
A study of bodies, glazes and colors. A specialized course in the technology and engineering aspects of the industry in which complex whiteware mixtures and glazes are employed.
Three lectures per week, first semester.
Three credit hours. Prerequisite, Ceramics 106.

* For elective or graduate credit.

*114. REFRACTORIES.

A study of the fundamental technology of all kinds of refractories and the engineering aspects of their production and use.
Three lectures per week, second semester.
Three credit hours. Prerequisite, Ceramic 104.

*115. LIME, GYPSUM AND CEMENT.

The properties, manufacture, testing, and uses of cementing materials.
Three lectures per week, first semester.
Three credit hours. Prerequisite, Ceramics 104.

*118. ENAMELS.

The technology of the application of porcelain enamels to metals.
Two lectures per week, second semester.
Two credit hours. Prerequisite, Ceramics 104.

119–120. SEMINAR.

Seminar in Ceramic Engineering or Technology, for graduates. Hours to be arranged.

121. ENGINEERING I.

The engineering features of structural planning and design, plant layout and ceramic-plant design.
Two lectures per week, first semester.
Two credit hours. Prerequisite, Ceramics 106 and Physics 37 and 38.

122. ENGINEERING II.

The engineering features of structures and of ceramics-equipment design, particularly as applied to the drying and firing of ceramic ware.
Two lectures per week, second semester.
Two credit hours.

*123–124. ADVANCED CERAMIC TECHNOLOGY.

The study of solid-state reactions, ion exchange, unequilibrium crystallizations, etc., and their ceramic implications.
Two lectures per week, each semester.
Two credit hours each semester.

*125. THERMOCHEMICAL MINERALOGY.

Establishment and interpretation of phase equilibrium diagrams to predict quantitatively the formation of ceramic minerals at high temperatures.
Two lectures per week, first semester.
Two credit hours. Prerequisite, Chemistry 40.

126. ADVANCED CERAMIC ENGINEERING.

For graduate students. Undergraduates must receive special permission should they desire to take it.
A study of the recent developments in furnaces, kilns, and equipment for ceramic plants.
Two lectures per week, second semester.
Two credit hours.

151–152. A BRIEF INTRODUCTION TO THE METHODS FOR PRODUCING CLAYWARE.

Particular attention is given to the use of pottery plaster, the steps in mold making, and the jiggering and casting processes. Use of equipment for common ceramic operations is demonstrated.
One laboratory period each week, first or second semester.
One credit hour.

* For elective or graduate credit.

*159. WHITEWARE LABORATORY.

Laboratory studies to demonstrate the properties of whiteware raw materials, the preparation and testing of typical whiteware bodies, glazes and colors. Two laboratory periods per week, first semester. Associated with Ceramics 109.
Two credit hours.

161–162. THESIS.

Original research on some problem decided upon in conference with the instructor.
Two laboratory periods per week; each semester.
Two credit hours, each semester.

*168. ENAMEL LABORATORY.

Two laboratory periods per week, second semester. To be taken with Ceramics 118.
Two credit hours.

172. ENGINEERING DESIGN.

Design practice in which the structural engineering details of plant design, plant layout and plant equipment, including kilns and driers, are carried out.
Three laboratory periods per week, second semester. Associated with Ceramics 122.
Three credit hours.

CHEMISTRY

7–8. GENERAL INORGANIC CHEMISTRY.

A systematic study of fundamental principles, theories, and calculations. High-school chemistry is a desirable foundation for taking this course.
Two lectures, one recitation and two laboratory periods per week.
Five credit hours each semester.

Qualitative Analysis.

Qualitative analysis of metals and inorganic compounds and the chemical principles involved. A brief, intensive course presented as the latter portion of Chemistry 8.
Laboratory fee $15.00 each semester. Breakage deposit $15.00.

13. QUANTITATIVE ANALYSIS.

Volumetric and gravimetric analysis. One lecture, one quiz, two laboratory periods per week, first semester.
Three credit hours. Prerequisite, Chemistry 8.
Laboratory fee $15.00. Breakage deposit $15.00.

13A. CALCULATIONS IN QUANTITATIVE ANALYSIS.

Methods and practice in various types of calculations arising from analytical procedures.
One hour, first semester.

40. STATES OF MATTER.

An introduction to the principles of physical chemistry most useful in ceramics. Studies on gases, liquids, and solids; vitreous and crystalline conditions; the phase rule, thermochemistry; plasticity, viscosity, and other properties of matter.
Three lectures per week, second semester.
Three credit hours. Prerequisite, Chemistry 8 and Chemistry 13.

* For elective or graduate credit.

41. PHYSICAL CHEMISTRY.

A continuation of Chemistry 40. Theoretical chemistry. Prerequisites: Chemistry 13 and 40; Calculus.
Five class periods per week, first semester.
Five credit hours.

42. PHYSICAL CHEMISTRY LABORATORY.

A laboratory course to accompany Chemistry 41.
One laboratory period per week, second semester.
Laboratory fee $15.00. Breakage deposit $15.00.
One credit hour.

43. FUELS AND COMBUSTION.

Fuels, principles of combustion, and heat balance. Two lectures and one laboratory per week, first semester.
Three credit hours. Prerequisite, Chemistry 13.
Laboratory fee $15.00. Breakage deposit $15.00.

44. ADVANCED QUANTITATIVE ANALYSIS I.

The analysis of silicate rocks, clays and ceramic materials. One lecture and two laboratory periods per week, second semester.
Laboratory fee $15.00. Breakage deposit $15.00.
Three credit hours.

45. GLASS ANALYSIS.

A laboratory course designed to accompany Ceramics 201.
Two laboratory periods per week, first semester.
Laboratory fee $15.00. Breakage deposit $15.00.
Two credit hours.

48. ADVANCED QUANTITATIVE ANALYSIS II.

A study of the principles and applications of physico-chemical methods and the use of instruments in quantitative analysis.
Two laboratory periods per week, second semester.
Two credit hours.

46. FUNDAMENTALS OF ORGANIC CHEMISTRY.

A summary course, emphasizing as much as possible, applications of carbon compounds in ceramics. Elective, for undergraduate credit.
Two lectures per week, second semester.
Two credit hours.

50. INDUSTRIAL STOICHIOMETRY.

Chemical calculations of manufacturing processes, including the use of material and energy balances applied to specific plant operations.
Two lectures per week, second semester.
Two credit hours.

*70. CHEMISTRY OF THE COLLOIDAL STATE.

Two lectures per week, second semester; two credit hours.

72. MOLECULAR STRUCTURE AND THE CHEMICAL BOND.

A survey of the nature of the chemical bond and the relation of the structure of inorganic molecules to the chemical and physical properties of matter. A more elementary and general course than Chemistry 128.
Two lectures per week, second semester.
Two credit hours.

* For elective or graduate credit.

*77. ELEMENTARY SPECTROSCOPY.

Emission and absorption spectroscopy in chemical analysis. Construction and use of spectrographic equipment. Spectrum analysis by arc or spark methods of excitation.
Qualitative and quantitative analysis.
One lecture per week, first semester. One credit hour.
Admission by special permission.

*78A. SPECTROSCOPY LABORATORY.

Qualitative and quantitative analysis of inorganic salts and ceramic materials for ceramic engineering students.
One 3-hour laboratory period per week, second semester.
Prerequisite, Chemistry 77. One credit hour.
Laboratory fee $5.00.

*78B. SPECTROSCOPY LABORATORY.

Qualitative analysis of ceramic materials. Absorption spectroscopy. Glass technology students and chemistry majors.
One 3-hour laboratory period per week, second semester.
Prerequisite, Chemistry 77. One credit hour.
Laboratory fee $5.00.

79. ADVANCED SPECTROCHEMISTRY.

For graduate students. Undergraduates must receive special permission if they desire to take it.
Research applications. Analytical interpretation. Control and experimental.
One hour lecture and six hours laboratory per week. Three credit hours.
For graduate students by special permission. Offered both semesters.
Laboratory fee $10.00.

128. CRYSTAL CHEMISTRY.

For graduate students. Undergraduate students must receive special permission if they wish to take it.
The principles of crystal chemistry; the nature of the bond; the sizes of atoms and ions, and the organization of these units into solid bodies. Greater emphasis is placed on the structure of silicate compounds, both crystalline and glassy, than on other compounds or on metals.
Two lectures per week, second semester.
Two credit hours. Prerequisite, Applied X-rays.

129–130. THERMODYNAMICS.

For graduate students. Undergraduate students must receive special permission if they wish to take it.
An introduction to the study of energy and heat, based on the first and second laws of thermodynamics.
Two lectures per week, each semester.
Two credit hours, each semester.

305. ELEMENTARY CHEMISTRY.

This is a special course in ceramic chemistry offered to Ceramic Design students in which the fundamentals necessary to an understanding of glazes and bodies are presented.
Two lecture periods and one laboratory period each week.
Three hours credit.
Prerequisite for 306.

* For elective or graduate credit.

CIVILIZATION

1–2. CIVILIZATION — OUR CULTURAL HERITAGE.

This course is an integration of the history of western civilization with the traditional freshman composition. Through concentration on a relatively few periods whose culture is judged to be of greatest significance, the course introduces the student to the basic patterns of social organization, intellectual activity, and artistic achievement. These materials form the basis of the work in composition, which meets the same quantitative and qualitative standards that are maintained in the traditional course in Freshman English. The course is conducted by a permanent teaching panel with occasional lectures given by representatives from the various departments of the college. Required of all freshmen in Design.

Six credit hours, each semester.

22. ENGINEERING INDOCTRINATION.

The broad aspects of the relationship of the engineer to society and his responsibility as a professional man and a citizen are treated by the coordinator of the course, assisted by instructors from the Liberal Arts College and by leading members of the engineering profession. The course also emphasizes engineering ethics, engineering methods, safety and industrial hygiene.

Three lectures per week, second semester.

Three credit hours.

DESIGN

301–302. HISTORY OF DESIGN.

Lectures and individual study of reference material. An examination of various methods and styles of creative expression, as influenced by changing patterns of social and physical environment. Architecture, sculpture, furnishings, tools, and graphic expression.

One lecture period per week.

One credit each semester.

303–304. ART HISTORY.

Two lectures each week

Two credits each semester.

305. CHEMISTRY OF CERAMIC MATERIALS. (Elementary Chemistry)

This is a special course in ceramic chemistry offered to Ceramic Design students in which the fundamentals necessary to an understanding of glazes and bodies are presented. Prerequisite for 306.

Two lecture periods and one laboratory period each week.

Two credits.

*306. CERAMIC RAW MATERIALS.

This is a special course in ceramics which deals specifically with the chemical nature of ceramic raw materials, clays and glasses. Ceramics 305 is a prerequisite.

Two lecture periods and one laboratory period per week.

Three credits.

*307. GLAZE CALCULATION AND DEVELOPMENT.

Two lecture periods and one laboratory period per week.

Three credits.

*308. CERAMIC COLORS AND TEXTURES.

An advanced course in the development of ceramic colors and textures. Elective. Two lecture periods and one laboratory period per week.

Three credits.

* For elective or graduate credit.

*309–310. EQUIPMENT AND MATERIALS.

Kiln construction, firing reactions, temperature measurement and control. Ceramic production equipment and plant design.

Two lecture periods per week, first semester.

Two credits.

Individual problems in the laboratory development of ceramic materials. Elective.

Two laboratory periods per week.

Two credits.

321–322. DRAWING AND PAINTING I.

Free-hand drawing and design from still life, landscape, the figure and memory; all media used. Introductory work in color.

Three and one-half laboratory periods per week.

Two credits first semester.

Three credits second semester.

323–324. DESIGN I.

Graphic interpretation. Lines, planes, values, color and texture, and their specific uses in relation to design problems; problems in perspective drawing. All media used in this course.

Four and one-half laboratory periods per week.

Four credits first semester.

Three credits second semester.

323A–324A. DESIGN II.

Exercises in three-dimensional design using a variety of materials. The student designs and constructs simple tools and utensils which are also presented graphically by means of construction drawings.

325–326. SCULPTURE I.

Elements of three-dimensional composition using clay and other media. Organization of forms, space and volumes, as the basis of creative sculpture.

Three laboratory periods per week.

Two credits each semester.

327–328. PAINTING AND DRAWING II.

Plastic drawing, spatial organization, from life, still life, and landscape. All media used.

Three laboratory periods per week.

Three credits first semester.

Two credits second semester.

329–330. TWO-DIMENSIONAL DESIGN.

A continuation of course 324. Applied problems in two-dimensional design, color, exercises in lettering design. All media used.

Two laboratory periods per week.

Two credits each semester.

329A–330A. THREE-DIMENSIONAL DESIGN.

The development of special knowledge and skills necessary to the solution of design problems. Design of small objects in wood, metal, glass, and other materials. The study of sections, profiles and models in their roles as tools of design expression.

Four and one-half laboratory periods per week.

Four credits first semester.

Three credits second semester.

* For elective or graduate credit.

331–332. SCULPTURE II.

A continuation of Course 325–326.
Four laboratory periods per week.
Two credits first semester.
Three credits second semester.

333–334. PAINTING AND DRAWING III.

Creative organization of pattern, color, texture, and form in relation to a two-dimensional surface, decorative pattern for various materials and processes. All types of media are used in this course.
Two laboratory periods per week.
Two credits each semester.

335–336. INDUSTRIAL DESIGN I.

Basic problems in design, stressing the influence of function, materials, methods of making, social and economic factors. Problems in interior arrangement, furniture models and constructions. Selected problems are produced, full scale, in the final materials.
Three and one-half laboratory periods per week.
Three credits each semester.

*335A–336A. INDUSTRIAL DESIGN II.

A design course with ceramic problems in color, texture and pattern.
Two laboratory periods per week.
Two credits each semester.

*337–338. DESIGN AND PRODUCTION I.

Lecture and laboratory. A general course in the design and production of ceramic wares. Creative problems in the adaption of abstract form to problems of function and making. Use of clays, glazes, and color. Practice in methods of forming in clay and plaster. Mold and model making for wheel-formed and sculptured models. Kiln operation.
Five and one-half laboratory periods per week.
Four credits each semester.

*337A–338A. SCULPTURE III.

Sculptural problems related to Course 337–338.
Two laboratory periods per week.
Two credit hours each semester.

*339–340. PAINTING AND DRAWING III.

An advanced course in painting and drawing – all media used.
Two laboratory periods per week.
Two credits each semester.

*341–342. DESIGN THEORY.

An advanced course in graphic design and three-dimensional problems, planned individually with each student.
Two laboratory periods per week.
Two credits each semester.

*341A–342A. POTTERY DESIGN.

Lecture and laboratory. Design solutions planned in this course are produced in final form in connection with course 343–344.
Two laboratory periods each week.
Two credits each semester.

* For elective or graduate credit.

*343–344. DESIGN AND PRODUCTION II.

A professional course in the solution of design problems. Individual problems in ceramics, from drawing to final product, and designed for various methods of making and types of market, are planned and produced by each student.
Five laboratory periods per week.
Four credits each semester.

*343A–344A. SCULPTURE IV.

Work in this course is co-ordinated with that given in 343–344.
Two laboratory periods each week.
Two credits each semester.

*345–346. METHODS.

Methods and materials of Art Education.
Lecture and Laboratory.
Two credits each semester.

363–364. SCULPTURE AND THREE-DIMENSIONAL DESIGN.

For graduate students, only. Credit hours and schedule to be arranged.

367–368. PAINTING, DESIGN, DRAWING.

For graduate students, only. Credit hours and schedule to be arranged.

369–370. LABORATORY PROBLEMS.

For graduate students, only. Credit hours and schedule to be arranged.
Problems in the design and production of ceramic wares for various types of uses, methods of production, and market requirements. Problems exploring the creative uses of earthy materials for design purposes.
Work on graduate thesis is included as a part of this course.

369A–370A. LIBRARY RESEARCH.

For graduate students, only. Credit hours and schedule to be arranged.
Assigned reading, library research and study.
Each graduate student follows an individual program in this course.

THESIS.

For graduate students, only. Credit hours and schedule to be arranged.

* For elective or graduate credit.

Work on an approved thesis is begun after the candidate has been admitted to full graduate study. The thesis is a problem or an integrated series of problems in creative design. The subject matter may be chosen to accord with the student's individual objective. In general this would come under one of two broad fields of creative design – design for various uses, materials, and types of manufacture, or design as related to the problems of education.

An average thesis requires about 14 credit hours out of the total graduate requirements of 36 hours. A general understanding of the social and economic problems of the designer's profession is expected of all students. Professional skill in design for materials and a detailed knowledge of production problems are requirements.

The final thesis is submitted in writing, illustrated by photographs, diagrams, plans or drawings, and by examples of completed work.

A brief interneship in a ceramic plant or other appropriate professional outlet may be required in cases where it is indicated by the objective and scholastic standing of the student.

The completion of a thesis will require a variety of skills including:

1. Skill and experience in the creative use of colors, textures and processes in relation to the material; and understanding of the technical problems involved.
2. Various methods and media of design presentation and expression.
3. The making of suitable models and molds; the planning of "jigs," tools, and other production aids.
4. Experience with various types of small- and large-scale production, and their appropriate design interpretations.

ECONOMICS

11–12. PRINCIPLES AND PROBLEMS.

A study of modern economic society and the functioning of the price-system. The technique of economic analysis. The application of economic principles and methods of analysis to present-day economic problems. Three lectures per week.

Three credit hours each semester.

EDUCATION

41. EDUCATION IN A DEMOCRACY.

A course designed as general education for the lay student, as well as a first course in Education for the prospective teacher. A study of the function of education in society, and, in particular, the organization of the American schools system, the influences affecting our schools, and present practices and trends.

Two credit hours.

42. FOUNDATIONS OF THE PHILOSOPHY OF EDUCATION.

The application of philosophy of education to the processes, the principles, the objectives, the methods, and the organization of the school system in a democracy.

Two credit hours.

51–52. SECONDARY SCHOOL METHODS AND MATERIALS.

The problems, methods, materials, and techniques involved in the work of a high-school teacher.

Three credit hours first semester; one credit second semester.

For work in Art education see Ceramic courses 304A and 304B.

ENGLISH

1–2. ENGLISH COMPOSITION.

The use of written and oral language. Three lectures and discussions per week.

Three credit hours each semester.

21–22. INTRODUCTION TO ENGLISH LITERATURE.

A survey of the development of English literature from its beginning to the close of the Nineteenth Century, with emphasis on the most significant writings of the representative authors in each period. Three lectures per week.

Three credit hours each semester.

35. TECHNICAL WRITING (PROFESSIONAL ENGLISH).

Practice in routine business correspondence followed by a study of the engineering report, technical article, and research paper. Primarily for ceramic engineering students.

Two credit hours.

GEOLOGY AND MINERALOGY

GEOLOGY 5.

This is a course in general geology with special reference to the materials of ceramic importance.

Three lectures per week, first semester.

Three credit hours.

MINERALOGY 1.

This course includes an introduction to crystallography and to the study of minerals and their identification by chemical and physical tests. Two lectures and one laboratory period per week, second semester.

Three credit hours.

PETROGRAPHY I.

Summary of the nature and properties of electromagnetic radiations including light and X-rays in refraction, diffraction and detection; the use of the polarizing microscope in the study of ceramic raw materials and products, the measurement of particle size, stress analysis, photomicrography, and the identification of natural and artificial minerals; the use of X-rays in radiographic and microradiographic inspection; X-ray diffraction in the identification of mineral mixtures and determination of particle size; spectrographic methods for the qualitative and quantitative analysis of inorganic materials by emmission and absorption.

Three lectures and one laboratory period per week, second semester.

Four credit hours.

*PETROGRAPHY II.

Advanced work in the use of the petrographic microscope and accessories in the examination and photography of ceramic raw materials and products.

One laboratory period per week, first semester.

Two credit hours. Prerequisite, Petrography I.

*APPLIED X-RAYS.

The study of X-ray diffraction and its application to ceramic materials.

Two lecture periods per week, first semester.

Two credit hours.

*APPLIED X-RAY LABORATORY.

One laboratory period per week, first semester.

One credit hour.

* For elective or graduate credit.

GLASS TECHNOLOGY

200. RAW MATERIALS.

The chemistry of the glassmaking oxides. A study of the methods of production of the minerals and chemicals used in glassmaking and of the chemical reactions and properties; methods of testing purity, chemical composition, and functions in glassmelting.

Three lectures per week.

Three credit hours.

201–251. GLASS COMPOSITION — GLASS ANALYSIS.

Simple glasses are melted, and the melting process is studied in relation to refractories, containers, temperatures, batch compositions, and fining agents. Text and references to the literature of glass covering glass composition, furnace design and operation, tank blocks and parts, and fundamental chemistry of glassmaking and calculations, working processes, annealing, finishing, defects and testing of commercial glassware.

Five lectures and two laboratory periods per week, first semester. Seven credit hours. Prerequisites — two years college work in science or equivalent experience.

202–252. THE PHYSICS OF GLASS — GLASS MELTING.

The effects of common and unusual colorants, the influence of batch and glass compositions, the study of temperatures and furnace atmospheres in relation to colors, the mathematics of transmission of light through glass, the specific physical and optical properties of glass, constitution theory, and historical development.

Five lectures and two laboratory periods per week, second semester.

Seven credit hours.

*203. PROPERTIES OF GLASS.

Elective. Primarily for graduate students. Text, lectures, assigned reading, individual reports on research papers. The physical chemical and optical properties of glass are intensively studied.

Three lectures per week, first semester.

Three credit hours.

*204. GLASSMELTING UNITS.

Elective. Primarily for graduate students. Studies on the design, construction, and operation of glass furnaces.

Three lectures per week, second semester.

Three credit hours.

*205. SURVEY OF GLASS TECHNOLOGY.

A lecture course offered for the benefit of students in General Ceramics or other departments, covering the subject in a summary manner. Three lectures per week, first semester.

Three credit hours.

*206. STRUCTURE OF GLASS.

Elective. Primarily for graduate students. A lecture course dealing with the coordination and linkage of cations and oxygen in the glass-forming, glass-modifying, and intermediate oxides, from the viewpoint of crystal chemistry.

Two lectures per week, second semester.

Two credit hours.

* For elective or graduate credit.

261–262. GLASS THESIS.

Laboratory study of a problem selected in conference with the department head. Review of literature. Two laboratory periods per week, each semester.

Two credit hours, each semester.

INDUSTRIAL MECHANICS

1–2. ENGINEERING DRAWING.

The fundamental principles of drafting and descriptive geometry.

Three credit hours each semester.

3–4. MECHANICAL DRAWING.

A fundamental drafting course to acquaint the beginning art student with the graphical language used by engineers.

Two credit hours each semester.

31–32. ADVANCED MECHANICAL DRAWING.

Mechanical drawing which parallels the commercial design course for junior art students, to give them as much practical industrial training as possible.

Two credit hours each semester.

MATHEMATICS

5–6. FRESHMAN MATHEMATICS.

A unified course including topics from college algebra, trigonometry, and analytic geometry. Intended primarily for freshmen of the College of Ceramics.

Five credit hours each semester.

15–16. CALCULUS.

The processes of differentiation and integration and their applications. Prerequisites, Mathematics 5-6 or 11-12. Permission may be given to exceptional students to take courses 12 and 16 simultaneously.

Four credit hours each semester.

21S. PLANE SURVEYING.

Primarily for engineering students in the College of Ceramics. A student must do satisfactory work in both the field and classroom in order to receive credit. Offered for three weeks each summer, beginning immediately after the close of the regular school year. Prerequisites, Mathematics 5 and Engineering Drawing 1-2 or their equivalent. Instrument fee $10.00.

33C,H ELEMENTARY STATISTICS.

An introduction to the statistical methods of the natural and social sciences. This course will be repeated the second semester. The first semester is intended primarily for students in the College of Liberal Arts, while the second semester is primarily for students in Glass Technology. Prerequisites, Mathematics 3 or 5, or their equivalent. Laboratory fee $3.00.

Three credit hours.

65–66. MATHEMATICAL STATISTICS.

A study of modern techniques in mathematical statistics, frequency distributions, correlation, analysis of variance, small sample theory, and the design of experiments. Prerequisite, Mathematics 15-16. Laboratory fee $2.00 per semester.

Three credit hours each semester.

*101–102. DIFFERENTIAL EQUATIONS.

The solution of first order and second degree differential equations and general linear differential equations, with applications to the sciences. Prerequisite, Mathematics 15-16.

Two credit hours each semester.

PHYSICAL EDUCATION

1–2.

Instruction is given in all the following activities: in the fall — football, cross-country, touch football, soccer, and tennis; in the winter — basketball, volley ball, wrestling, boxing, fencing, badminton, tumbling, games, contests and relays; in the spring — track, baseball, tennis and softball.

Required of freshmen.

Two hours practice.

One credit hour each semester.

11–12.

A continuation of 1-2 with more advanced instruction in skills of the various activities. Required of sophomores.

Two hours practice.

One credit hour each semester.

PHYSICS

11–12. GENERAL PHYSICS.

This course covers the whole field of physics with emphasis on problem solving and engineering applications. Prerequisites, high school trigonometry, or registration in freshman mathematics. Three lectures and one laboratory. Laboratory fee $10.00 per semester.

Four credit hours each semester.

31. HEAT.

The more important phenomena of heat, temperature measurement, and the elements of thermodynamics are included in this course. Prerequisites, Physics 11-12 and Mathematics 15-16. Two lectures and one laboratory. Laboratory fee $10.00.

Three credit hours.

32. OPTICS.

The principles of geometrical and physical optics. Prerequisites, Physics 11-12 and Mathematics 15-16. Two lectures and one laboratory. Laboratory fee $10.00.

Three credit hours.

34. MAGNETISM AND ELECTRICITY.

This course covers the phenomena of magnetism and electricity and the theoretical explanation. Prerequisites, Physics 11-12 and Mathematics 15-16. Three lectures.

Three credit hours.

36. ELECTRONICS LABORATORY.

This course is similar to Physics 35 except that emphasis is placed on electronic equipment and its applications in research and industry. It is not intended to be a course in communications engineering. Prerequisites, Physics 11-12, Mathematics 15-16, and permission of the instructor. One lecture and one or two laboratory sessions. Laboratory fee $10.00 each laboratory session.

Two or three credit hours.

* For elective or graduate credit.

37. MECHANICS.

A study of statics and kinetics, with emphasis on the determination of forces acting on bodies in equilibrium. Both analytic and graphic methods are used.

Four credit hours. Prerequisites, Mathematics 15-16 and Physics 11-12.

37A. MECHANICS ADVANCED.

A more analytical course in mechanics, leading to the development of general mechanical principles.

Four credit hours. Prerequisites, Mathematics 15-16 and Physics 11-12.

38. STRENGTH OF MATERIALS.

The analysis of stresses and strains in structural members. Application to the design of structures.

Four credit hours. Prerequisites, Mathematics 15-16 and Physics 11-12.

111. SOLID-STATE PHYSICS.

For graduate students. Undergraduates must receive special permission if they wish to take it.

Application of fundamental principles to a study of the electrical and magnetic properties of matter. Theory of dielectrics from an atomic point of view. Behavior of induced and permanent dipoles in electric fields. Dipole, atomic and electronic polarization. Dependence of dielectric constant and index of refraction on temperature and frequency. Ferroelectricity. Dia-, para- and ferromagnetism. Three lectures per week, first semester.

Three credit hours. Prerequisite: Physics 34.

Graduate credit only.

112. SOLID-STATE PHYSICS (Continued).

For graduate students. Undergraduates must receive special permission if they wish to take it.

A physical approach to the study of the nature of bonding in solids, from both the classical and wave-mechanical points of view. Theory of electrical conductivity and specific heat. Insulators, semiconductors and conductors. Three lectures per week, second semester.

Three credit hours. Prerequisite: Physics 34.

Graduate credit only.

PSYCHOLOGY

11. INTRODUCTORY PSYCHOLOGY.

An examination and discussion of the basic concepts in psychology, including: learning, motivation, heredity, environment, intelligence, emotion, personality, and adjustment. Demonstrations and group experiments.

Three credit hours either semester.

32. EDUCATIONAL PSYCHOLOGY.

Development and behavior; emotional, social and mental development; nature and measurement of intelligence; nature of learning; principles of guidance in learning; transfer of training; adjustment process; mental health of students and teachers. Prerequisite, Psychology 11.

SOCIOLOGY

21–22. INTRODUCTION TO SOCIOLOGY. Three hours.

An introduction to social structures and social processes, with stress on the interaction of individuals and groups within the larger culture. This course is not open to freshmen except with the special permission of the department chairman.

Three credit hours each semester.

EXTRA-CURRICULAR

Campus life is motivated and governed by the students under the guidance of the personnel Deans. Among the many sponsored activities, each is certain to find one or more of interest. There are clubs and organizations carrying on programs pertaining to languages, sciences, drama, art, journalism, athletics, music, outdoor sports, aviation and scouting. There are honorary scholastic and service organizations which recognize a student's accomplishments in different areas.

ORGANIZATIONS

The Student Branch of the American Ceramic Society is an organization composed of students taking ceramic engineering, ceramic technology or glass technology. Its present membership is 200. Students elect officers who are responsible for arranging the year's program. Speakers, having messages of particular interest to the members, are brought to the campus.

The St. Patrick's Board is composed of upper-class technologists and engineers, elected by the seniors. The board manages the most important social event of the year, which is a celebration in honor of the birthday of St. Patrick, the patron saint of engineers. The celebration entails one-and-one-half days of fun and relaxation and associated with it are an all-university assembly, a tea dance, a parade of floats, and a Ceramic College open house.

Keramos is the national honorary ceramic engineering fraternity. Its membership is composed of students from all ceramic schools and colleges, and men particularly prominent in the ceramic engineering profession. The principal objectives of the fraternity are: to promote and emphasize scholarship and character; to stimulate mental achievement; and to promote interest in ceramic engineering. Student membership is based on scholastic record, character, and interest in ceramics. It is the highest honor a student in ceramic engineering or technology can attain.

PUBLICATIONS

The University students issue a weekly newspaper, the "Fiat Lux," and a year book, the "Kanakadea." Ceramic students interested in journalism or publishing as a hobby find ample opportunity for active work on these publications.

RELIGIOUS LIFE

Though religious activity is voluntary, a well-organized religious program forms an integral part of life on the campus. Distinctly nonsectarian in character, it provides for the spiritual development of the students. The Director of Religious Activities, as University

Chaplain and advisor to the Religious Fellowship of Alfred, does much to stimulate an interest in and an appreciation for things spiritual.

Chapel service is held each Tuesday during the College year. These services feature brief talks by the Chaplain and special music by the chapel choir. Attendance is voluntary.

Sunday services of a non-denominational character are held under the auspices of the Union University Church in the Seventh-Day Baptist Church.

The First Seventh-Day Baptist Church of Alfred offers opportunity for worship to those who are accustomed to worship on the Seventh Day.

Extending the benefits of weekly services of worship are the Canterbury Club for Episcopal students, the Newman Club for Catholic students, and the Hillel Foundation for Jewish students.

CONCERTS AND LECTURES

An outstanding group of lecturers and musical artists is brought to the campus each year to appear on the University Forum and in University assemblies. These programs are maintained through the inclusive college fee, and all regularly enrolled students are admitted without extra charge.

SOCIAL LIFE

Social life revolves around the open houses, informal dancing parties, the formal St. Pat's, Interfraternity and University Balls, various sports events, teas, receptions, the campus union, theatricals, and the Cooperative Motion Pictures.

SELF-HELP

The College cannot guarantee that a student will find work which will help him pay part of his expenses. Students should be prepared to finance their first two years, at least. Juniors and seniors are eligible for student assistantships and some find gainful employment in dining halls and in the village. The best means for a student to augment his resources substantially is to find employment during the summer vacation period.

INDUSTRIAL EXPERIENCE

Students are urged to secure employment in ceramic plants during the summer-vacation period. A few months' work under industrial conditions aid materially in rounding out their training. Every possible aid is given students in their efforts to obtain summer positions.

STUDENT HOUSING

In normal times all freshmen, unless excused by the Dean of Men or the Dean of Women, live and take their meals in one of the University dormitories. These include Bartlett Memorial Dormitory, for men, and The Brick, for women. Each is in charge of a housemother, who is assisted by upperclass counselors. Most of the rooms in Bartlett are single, whereas all in The Brick are double.

After the freshman year, students who have joined fraternities or sororities live and board in those houses. Non-sorority women are normally accommodated in The Brick. Men who do not live in fraternity houses are lodged in University dormitories or private homes.

Families find living quarters in Saxon Heights, a group of temporary dwellings erected by the F.P.H.A. near the Campus, on a site prepared by the State.

RESERVE OFFICERS' TRAINING CORPS

A United States Army Reserve Officers' Training Corps program of the Branch General Type has recently been established at Alfred University. Students who successfully complete the four years of instruction in Military Science will be commissioned as 2d Lt's. in the Officer Reserve Corps by the President of the United States. Appointments will be to a specific branch of the United States Army and will be made on the basis of individual aptitudes and military needs.

The program is divided into two phases. The first two years are known as the Basic Course and the second two years as the Advanced Course. All freshman and sophomore male students who are physically fit will be required to participate in the basic phase of the program. Students who apply, and who are acceptable to the Professor of Military Science and Tactics, may participate in the Advanced Course.

The Basic Course, which is required for graduation, carries regular college credit. These hours may be substituted for the requirements in physical education.

In addition, Advanced Course students are furnished on a loan basis all textbooks, equipment and uniforms. They are also paid a commutation of subsistence allowance of approximately twenty-seven dollars per month during the junior and senior years.

The academic program for R.O.T.C. students will be reviewed at the end of the Sophomore year and suitable adjustments made for the Junior and Senior years.

REGULATIONS

REGISTRATION

All students are expected to register on the days designated for that purpose in the College calendar. Any student not registering on the days set therefor will be charged a fee of five dollars for late registration.

Each student in the Technology and Engineering Departments is expected to register for at least sixteen hours of work. Each student in the Art Department is expected to register for at least fifteen hours of work each semester.

The conditions under which students may register for more than the number of hours specified in the curriculum are the following: (1) physical training and assembly may be taken in addition to the regular schedule; (2) if a student had an average grade of B or higher in the preceding semester, he may register for additional work with approval of the Dean of the College.

With the exception of the electives, all courses are definitely prescribed, and no change can be made in the schedule. Electives may be chosen by the student from a permissible list, but in making his selection he should be governed by the advice of the faculty.

CREDIT, ATTENDANCE, EXAMINATIONS

One class period per week for one semester, lecture or laboratory, constitutes one unit of credit. The number of these credits required for graduation varies among the three departments as indicated in the curricula.

The class period is fifty minutes. The laboratory periods vary from two to four hours in length. Regular attendance without tardiness is expected of all the students. Absence on the day preceding or the day following a vacation period during the College year makes the student liable for penalty.

In addition to the routine quizzes that are given periodically throughout the semester, final comprehensive examinations are given in each course at the end of the semester covering the entire semester's work. This examination is the main factor in determining the scholastic standing of the student. A "block week" period of several days immediately preceding these examinations is provided, with no classes in operation, so as to afford ample opportunity for the student to review the semester's work and correlate all parts of it. The full time of the faculty is available for private consultation during this period.

SCHOLASTIC STANDARDS

Owing to the exacting demands of the ceramic profession, high standards of scholarship must be maintained. Students unable to

meet these standards are dropped from the College. Instructors are available for private consultation and help, and the instructional work itself is supplemented by a system of faculty advising intended to help the student with all of his problems.

Students who fail to meet the scholastic requirements of the college are placed on probation for one semester. If, at the end of the probation semester, the student has failed to raise his scholastic index to the required figure, he is dropped from college. In this case he is not eligible to apply for readmission until one semester has intervened. For this purpose, a six-week summer session does not constitute an intervening semester.

GRADES AND INDICES

The grades used by the instructors in reporting the scholastic status of the students and the points corresponding with the grades are given in the following table:

Grade	Quality of Work	Point per Credit Hour
A	Excellent	3
B	Good	2
C	Fair	1
D	Poor	0
E	Conditioned Failure	−1
F	Failure	−1
I	Incomplete	No Effect
WF	Withdrawn Failing	−1
WP	Withdrawn Passing	No Effect

The grade-point index is obtained by dividing the total number of points by the total number of credit hours. In determining the semester grade-point index only the grades and points for the semester are included. In determining the cumulative grade-point index all of the work for which the student has credit is included.

In order that students may have acceptable scholastic standing, the quality of their work in all their courses must be such as to yield the following cumulative grade-point indices:

Year	Grade-Point Index Required, Cumulative
Freshman	0.50
Sophomore	0.75
Junior — First semester	0.85
Junior — Second semester	1.00
Senior	1.00

These requirements apply to either semester of the College year. A student who for the first time fails to meet these requirements but whose cumulative grade-point index is within 0.5 of the specified figure, will not be dropped from College immediately but will be given one semester of scholastic probation to bring his index up to the required standard. If at the end of the probationary semester he fails to raise the index to the required standard, he becomes ineligible to continue in College. A student who is not on probation but whose cumulative grade-point index is more than 0.5 below the required index, immediately becomes ineligible to continue in College.

HONORS, PRIZES AND AWARDS

Members of the freshman, sophomore, and junior classes, who have a cumulative grade-point index of 2.0 or more, are eligible for a certificate of merit.

Members of the senior class may receive honors as follows:

a. Summa cum laude, or highest scholastic honors, to those having a cumulative index of 2.9 or more, with no grade below B.
b. Magna cum laude, or high honors, to those having a cumulative index between 2.6 and 2.9, with no grade below C.
c. Cum laude, or honors, to those having a cumulative index between 2.2 and 2.6.
d. Departmental honors to those who are recommended by the heads of the various departments as having done superior work and who have a cumulative index of 2.2 or more.

The Major Edward Holmes Thesis Prize of $25 is awarded to the senior in either of the Technology or Engineering Departments who submits the best research thesis. The award is decided by a committee of industrial executives, representing the Ceramic Association of New York, the founder and donor of the prize.

The College Citizenship Award, also established by the Ceramic Association, is made annually, by nomination by students and vote of the faculty, to that Senior whose entire record as a College citizen is most outstanding.

The award of research fellowships is discussed in another section of this catalogue.

REGISTER OF STUDENTS: 1952-1953

Name	*Classification*	*Residence*
Abbey, Constance L.	C.D. '56	Floral Park
Abbott, Keith E.	Tech. '56	Franklinville
Akmoran, Huban	Glass Sp.	Istanbul, Turkey
Albrecht, Nelson O.	Glass '55	Rochester
Arnold, Merle E.	Eng. '56	Syracuse
Avery, Robert C.	Eng. '56	Wellsville
Baldwin, Judith A.	C.D. '55	Hempstead
Barnes, Jessie E.	C.D. '56	Hornell
Bartholomew, George L.	Eng. '56	Niagara Falls
Baugh, Elizabeth A.	C.D. '53	San Antonio, Texas
Bayley, Glen F.	Glass '55	Hornell
Benson, John E.	Eng. '56	Canisteo
Benzing, David H.	C.D. '53	Springville
Bergamaschi, Henry T.	Eng. '55	Union City, N. J.
Bertha, Edward J.	Eng. '56	New York
Bierly, Harriet A.	C.D. '56	Endicott
Binder, Oscar P.	C.D. Grad	Farmingdale
Blankheit, Carolyn A.	C.D. '53	Kenmore
Bliss, Drusilla H.	C.D. '54	Morrisville
Bloss, Harold	Eng. '55	Whitesville
Boorman, John F.	Eng. '53	E. Rochester
Bouvier, Madelcine	Tech. Spec.	Paris, France
Brooks, Laura E.	C.D. '56	Beaver Falls, Pa.
Brown, Donnell S.	C.D. '54	Binghamton
Brown, Sandra R.	C.D. '56	Tuckahoe
Brown, W. Richard	Glass '56	Alfred Station
Brummer, George M.	Eng. '54	Williamsville
Bullard, R. Keith, Jr.	Glass '55	Port Washington
Bunnell, Diana V. (Mrs.)	C.D. Spec.	Alfred
Burkert, John G., Jr.	Eng. '56	Valley Stream
Button, Daniel D.	Eng. '55	Belmont
Carlson, William A.	Eng. '55	Niagara Falls
Carmi, Moshe M.	Eng. '56	Tel-Aviv, Israel
Casterline, Dale R.	Eng. '54	Painted Post
Champlin, Carlin S.	Eng. '56	Alfred
Chapman, Frank E., Jr.	Eng. '53	Brooklyn
Charland, Telesphore L.	Eng. Grad.	Keeseville
Chen, Edith T.	C.D. Sp.	Alfred
Childs, Clayton G.	Eng. '53	Friendship
Chow, George F.	C.D. Grad	Hong Kong, China
Christiano, Joseph P.	Eng. '54	Waterloo
Clark, Gerald R.	Eng. '56	Ashville
Colcord, John E.	Eng. '53	Hempstead
Conley, James M.	Eng. '56	Lockport
Conner, Bernard J.	Glass '55	Tompkins Cove
Conningham, Jane B.	C.D. Spec.	Seacliff
Constantine, Elizabeth J.	C.D. '55	Bronx
Constantinides, Jane W.	C.D. '54	Great Neck

Name	*Classification*	*Residence*
Cook, Miles H.	Eng. '54	Middletown
Corson, Robert M.	Glass '53	Endicott
Cosolito, Bartolo G.	Eng. '55	Port Washington
Courtright, John H.	Eng. '55	Johnson City
Crozier, George W.	Eng. '56	Jamestown
Curran, Martin T.	Eng. '54	Moira
Curtis, William H., Jr.	Eng. '54	Hornell
Dahoda, Peter	C.D. Grad	Cohoes
Daly, Howard J., Jr.	Eng. '54	Niagara Falls
Dassance, Sally A.	C.D. '56	Newfield
Davis, Elaine Y.	C.D. '56	Allentown, Pa.
Deck, Margaret A.	C.D. '56	Whitesville
DeCoursey, Donald T.	Eng. '54	Brooklyn
DeForest, Raymond A.	Tech. '53	White Plains
DeNejer, Jeanne E.	C.D. Grad	El Centro, Cal.
Denero, John V.	Tech. '53	Syracuse
Dennis, John S.	Eng. '56	Valley Stream
Dobson, Evelyn	C.D. '53	Alfred
Dorf, Arthur L.	Eng. '53	Brooklyn
Dulin, Francis H.	Eng. '54	Sarasota, Fla.
Earl, William A.	C.D. '53	Bolivar
Egbert, Leigh B.	C.D. '53	Ithaca
Ellinger, Joan	C.D. '56	New York
Epstein, Donald A.	Glass '56	Brooklyn
Epstein, Sylvia	C.D. '53	Brooklyn
Ersley, Chauncey J., Jr.	Eng. '53	Rexville
Ersley, Emmett J.	Eng. '55	Rexville
Esposito, Russell P.	Eng. '54	Pawling
Euvard, Louis E., Jr.	Eng. '56	Tuxedo Park
Ewell, Robert C.	Eng. '53	Saratoga Springs
Feinbloom, David T.	Eng. '55	Long Island City
Feld, Philip	Eng. '56	Brooklyn
Fernando, Hector S.	Eng. Spec.	Moratuwa, Ceylon
Fish, E. Thomas	Eng. '54	Brooklyn
Flipse, Merle K.	Eng. '55	Vestal
Fox, Gerald G.	C.D. '56	Poughkeepsie
Fox, Neil H.	C.D. '56	Brooklyn
Francis, Ronald K.	Eng. '55	Elmira
Fraser, Penelope	C.D. '55	Charlottesville, Va.
Frazier, James H.	Eng. '56	Yonkers
Fuess, Douglas A.	Eng. '56	Madison
Funk, James E.	Eng. '53	Buffalo
Geller, Harold I.	Eng. '56	Brooklyn
Geltman, Gerald L.	Eng. '55	Teaneck, L. I.
Getto, Allan	Eng. '55	Brooklyn
Gillman, Dale C.	Glass '56	Salamanca
Goldstein, Marcy	Eng. '54	Bronx
Goodridge, Paul F.	Eng. '56	Whitesville
Goodwin, Gail R.	Eng. '56	Holley
Goss, Bruce R.	Eng. '53	Weedsport

Name	*Classification*	*Residence*
Gould, Anita H.	Glass '54	White Plains
Gowdy, R. Ruth	C.D. '53	Utica
Graham, Henry G.	Eng. '56	Mayville
Grassi, Richard A.	C.D. '56	Islip
Grewer, P. Douglas	Eng. '54	Rochester
Griffith, William A.	Eng. '54	Little Falls
Grossman, Lucia	C.D. Grad	Sao Paulo, Brazil
Haecker, James L.	Eng. '56	Hamburg
Halem, Robert G.	Eng. '54	New York
Hall, Donald H.	Eng. '56	Rochester
Hanna, Richard D.	Eng. '53	Hartford
Hauser, Richard E.	Eng. '53	Buffalo
Hedges, Philip E.	Eng. '56	Hornell
Helliesen, Richard O.	Eng. Spec.	Stavanger, Norway
Henkes, John L., Jr.	C.D. '53	Loudonville
Hoffman, William A.	C.D. Grad	Roswell, N. Mexico
House, Roger L.	Eng. '56	Perry
Howe, David G.	Eng. '55	Wellsville
Hupman, Winifred L.	C.D. '55	Whitehall
Husted, Wayne D.	C.D. Grad	Poughkeepsie
Ichikawa, Yoshio	Eng. '53	Wahiawa, Oahu, T. H.
Jacobs, Jean M.	C.D. '54	Belmont
Jacobs, Joan E.	C.D. '54	Belmont
Jacolow, Jules	C.D. '54	Brooklyn
Janowitch, Joseph H.	Eng. '56	Long Beach
Jasper, Stanley J.	Eng. '54	Paterson, N. J.
Jelly, Chester F., Jr.	C.D. '55	Kearny, N. J.
Jewett, Jenifer	Glass '56	Upper Nyack
Johnson, Sylvia A.	C.D. '56	Ithaca
Jones, M. Roxanne	C.D. '53	Park Ridge, Ill.
Jordan, Duane R.	Glass '54	Oneida
Joseph, A. David	Glass '53	Highland Park, N. J.
Kaiser, Alan D.	Glass '55	Rochester
Kallup, Charles, Jr.	Eng. '54	Brooklyn
Kanler, Anthony R.	Eng. '56	Allegany
Kast, Henry G.	Eng. '54	Athol Springs
Katnack, Fred L.	Glass '54	Cold Spring Harbor
Katz, Bertram S.	C.D. '56	South Bronx
Keefe, Daniel J.	Eng. '54	Scarsdale
Kester, Stuart B., Jr.	C.D. '53	Boston
Kirkland, W. Roslyn	C.D. '53	New York
Klein, Jonathan D.	Eng. '54	Brooklyn
Knight, Charles H.	Tech. '56	Limestone
Krevolin, Lewis A.	C.D. '55	New Haven, Conn.
LaGreca, Frank A.	C.D. Spec.	Niagara Falls
Lass, Abram L.	C.D. '54	New York
Lattari, Patsy F.	Eng. '55	Waverly
Lax, Rosemary R. (Mrs.)	C.D. '53	Chicago, Illinois
Lebohner, Alyce E.	C.D. '56	Alfred
Lefkowitz, Carl H.	C.D. '56	Brooklyn

Name	*Classification*	*Residence*
Lewis, Gordon	Eng. '56	Ashville
Lewis, Robert T.	Glass '54	Bayside
Lindenthal, James R.	Eng. '54	Lakehurst, N. J.
LoCastro, Frank S.	Eng. '55	Batavia
Lounsbury, Jeanne H.	C.D. '55	Rochester
Lubin, Stephen H.	C.D. '56	Binghamton
Lydahl, Gustav T., Jr.	C.D. '56	Bronx
McDanel, Sumner W.	Eng. '56	Beaver Falls, Pa.
McKenna, John F.	Glass '54	Bellerose
McKinley, Donald L.	C.D. '55	Wichita, Kansas
McMurtry, Carl H.	Eng. '53	Wellsville
McNamara, Edward P., Jr.	Eng. '56	New Castle, Pa.
McNeilly, Clyde E., Jr.	Eng. '54	Oneonta
Mack, Martin P.	C.D. '56	Windsor, Conn.
Mahoney, David L.	Eng. '55	White Plains
Mansen, Dorothea M.	C.D. '56	Pearl River
Mapel, Marcianne	C.D. '55	Tarentum, Pa.
March, Donald H.	C.D. '54	Hempstead
Marquart, Rodney W.	C.D. '55	Oneonta
Marshall, Claude L.	Eng. '54	Middletown
Mendes, Howard D.	Glass '56	Brooklyn
Mendez, Louis E.	C.D. Grad	Goshen
Mesibov, Barbara	C.D. '55	Hewlett
Messner, Paul D., III	Eng. '55	Rome
Mike, Thomas M.	Eng. '54	Hornell
Milani, Helio	Eng. Spec.	Sao Paulo, Brazil
Miller, Elwin L.	Glass '53	Addison
Miller, Henry M., Jr.	Glass '54	Tuckahoe
Miller, Karl H.	C.D. '55	Port Washington
Miller, Marlin, Jr.	Eng. '54	South Bend, Ind.
Miller, Suzanne	C.D. '54	Canisteo
Milliken, William U.	Eng. '55	Bowerston, Ohio
Mindich, Barbara M.	C.D. '55	Bronx
Mistler, Richard E.	Glass '56	Medford
Montano, Andrew	Tech. '56	Wilmington, Cal.
Montgomery, Daniel	Eng. '53	Jacobsburg, Ohio
Moore, Carleton B.	Glass '54	Hempstead
Nagan, Harold R.	Eng. '54	Rochester
Nanning, Ronald L.	Eng. '55	Endicott
Nedreberg, Roy E. G.	Eng. '56	Ashville
Nelson, William I.	Glass '53	Binghamton
Newsome, George W.	C.D. '54	Springville
Nirodi, Heera	C.D. Spec.	Bangalore, S. India
Noren, Saul	Glass '54	New York
O'Brien, Donald H.	Eng. '55	Port Washington
O'Brien, Neil H.	Eng. '54	Port Washington
O'Connor, Francis J.	Eng. '55	Lycoming
Odink, Harry J.	Eng. '54	Port Washington
Oliver, John H.	Glass '54	Corning
Olson, A. Joan	C.D. '54	Floral Park

Name	*Classification*	*Residence*
Olympia, Frederick D.	Eng. '53	Newburgh
Ormsby, Phillip A.	Glass '56	Alfred
Orr, David B.	Eng. '55	Oneonta
Osborn, Janice L.	C.D. '53	Battle Creek, Mich.
Osborne, David G.	Glass Spec.	Marro, Middx, England
Paladino, Albert E., Jr.	Eng. '54	Bellmore
Palmer, M. Phyllis	C.D. '55	Whitestone, L. I.
Palombi, Lawrence M.	Eng. '55	Endicott
Pappis, James	Eng. '53	Boston, Mass.
Parks, Sidney E.	Eng. '56	Canisteo
Parsons, Barbara J.	C.D. Spec.	Schenectady
Patrick, Howard W.	Eng. '54	Campbell
Pedersen, John R.	Glass '53	Pittsburgh, Pa.
Peisher, William F.	Eng. '56	Canisteo
Perry, Robert W.	Eng. '56	Corning
Peterson, Albert F.	Eng. '55	Brooklyn
Pettengill, Floyd E.	C.D. '55	Staten Island
Phillips, Richard A.	Eng. '54	Niagara Falls
Potter, Allen B.	Eng. '56	Utica
Powell, Elizabeth A.	C.D. '54	Alfred
Quick, Donald A.	Eng. '53	Bolivar
Ramsdell, John L.	Eng. '55	Batavia
Ramsey, Robert W.	C.D. Grad	Fullerton, Cal.
Rao, Bh. B. Janahirama	Glass Grad	Madras, India
Ray, John M., Jr.	Eng. '54	Port Chester
Reed, James R.	Eng. '53	Rochester
Renkert, Donald H.	Eng. '53	Canton, Ohio
Richard, Marilyn R.	C.D. '53	Herkimer
Rickey, Charles J.	Eng. '55	Albion
Riegert, Richard P.	Eng. '53	Dobbs Ferry
Rittler, Hermann L.	Eng. '55	Rochester
Robbins, Ross W., Jr.	Eng. '55	Lancaster
Roberts, Louis E.	Eng. '55	Hornell
Russell, Edward B.	C.D. '54	Schenectady
Russell, George A., Jr.	Eng. '54	Orchard Park
Ryder, Robert J.	Glass '53	Olean
Sadowsky, Suzanne R.	Eng. '56	Brooklyn
Sailer, Edward	Eng. '53	Bellmore
Sandbank, Kenneth J.	Eng. '56	Rockville Centre
Sarian, Suren	Eng. '55	Niagara Falls
Scallon, Barbara L.	C.D. '54	Oneida
Schelker, Daniel H.	Eng. '56	Roscoe
Schwartz, Barbara L.	C.D. '56	Bronx
Sendker, Ray A.	Eng. '56	Snyder
Severin, Harold	Eng. '54	Bronx
Shanly, Sheila M.	C.D. '55	Buffalo
Shaw, Arthur H., Jr.	Tech. '55	Hornell
Shelton, Philo S., Jr.	Glass '54	Fairfield, Conn.
Sherman, Ann W.	C.D. '54	Silver Creek
Shupe, Gwendolyn U.	C.D. '54	Nassau

Name	*Classification*	*Residence*
Sicker, Richard E.	Eng. '56	Buffalo
Sichach, Ralph E.	Eng. '56	Gloversville
Skinner, Erasmus	Eng. '56	Honeoye Falls
Slawson, John W. III	Eng. '56	Bayville
Smith, Dale P.	C.D. '56	Bath, Pa.
Smith, William R.	Eng. '56	Geneva
Snyder, Merwin R.	Eng. '56	Penn Yan
Sobon, Leon E.	Eng. '56	Lackawanna
Sonenshine, Lewis	Eng. '53	Bronx
Soxman, Edwin J.	Eng. Grad	Kansas City, Mo.
Sproule, Richard T.	Glass '56	Corning
Stillman, A. Paul	Eng. '55	Alfred
Stone, Jerrold R.	Eng. '54	Congers
Storey, Richard G.	Eng. '56	Oceanside
Straka, Anna J.	C.D. '56	South Hempstead
Stull, John L.	Glass Grad	Hornell
Suraiya, Valjee J.	Glass Grad	Calcutta, India
Swain, W. Morrison	Eng. Spec.	Cattaraugus
Swanson, Leroy M.	Eng. '56	Jamestown
Swanson, Ralph A.	Eng. '53	Westbury, L. I.
Swart, Robert	Eng. '53	E. Aurora
Swartz, David L.	Eng. Grad	Sherman
Taeler, David H.	Tech. '54	New York
Tao, Yung	Glass Grad	Kunming, China
Tatem, William A.	Eng. '54	Westbury
Terkoski, Raymond A., Jr.	Eng. '56	Elmira
Thomas, Robert B.	Glass '55	Alma
Thompson, Orrin S., Jr.	Eng. '56	Red Hook
Thornton, H. Richard	Glass '54	Van Etten
Thunhorst, Helen M.	Eng. '56	Valley Stream
Tindall, E. Keith, Jr.	Eng. '55	Hempstead
Truesdale, Richard S.	Eng. '56	Geneva
Tuccio, Josephine J.	C.D. '56	Rochester
Tuomola, Richard V.	Eng. '56	Levittown
Vail, Milford R.	Eng. '56	Hamburg
VanVliet, Ilene W.	C.D. '55	Ontario, Canada
Veiga, Roberto A.	Eng. Spec.	Parana, Brazil
Viola, Nazzareno, Jr.	Eng. '53	Little Falls
Wagner, James B.	Glass '53	Sinclairville
Waith, Frank L.	Glass '54	Falconer
Watkins, E. Charles	Eng. '55	Bath
Waufle, Harold E.	Eng. '56	Hornell
Waugh, J. Stanley	Eng. '53	E. Patchogue
Weaver, Don S.	Eng. '56	Mayville
Webb, Bradley A.	Eng. '54	Hamburg
Weisensee, Charles W., Jr.	Eng. '55	Bellmore
Weissman, Julius S.	Eng. '56	New York
Westfall, Emmett M.	Eng. '55	Elmira Heights
Whalen, Thomas J., Jr.	Glass '53	Rochester
White, John V.	Eng. '56	Delhi

Name	*Classification*	*Residence*
Whitney, Earl J.	Glass '56	Corning
Wickwire, Charles E.	Eng. '55	Corning
Wightman, Richard F.	Tech. '56	Corning
Williams, Charles N.	Eng. '53	Auburn
Wilson, Roger E.	Eng. Grad	Lockport
Winslow, Anne C.	C.D. Grad	New York
Young, Paul C.	Eng. '56	Boston
Zielinski, Louis S.	C.D. '54	Phoenixville, Pa.
Zlotnick, Herman	Eng. '54	Brooklyn