

**ALFRED
UNIVERSITY
PUBLICATION**

**STATE UNIVERSITY OF NEW YORK
College of Ceramics
at
Alfred University**

ALFRED UNIVERSITY PUBLICATION CATALOG 1968-1969

STATE UNIVERSITY OF NEW YORK COLLEGE OF CERAMICS



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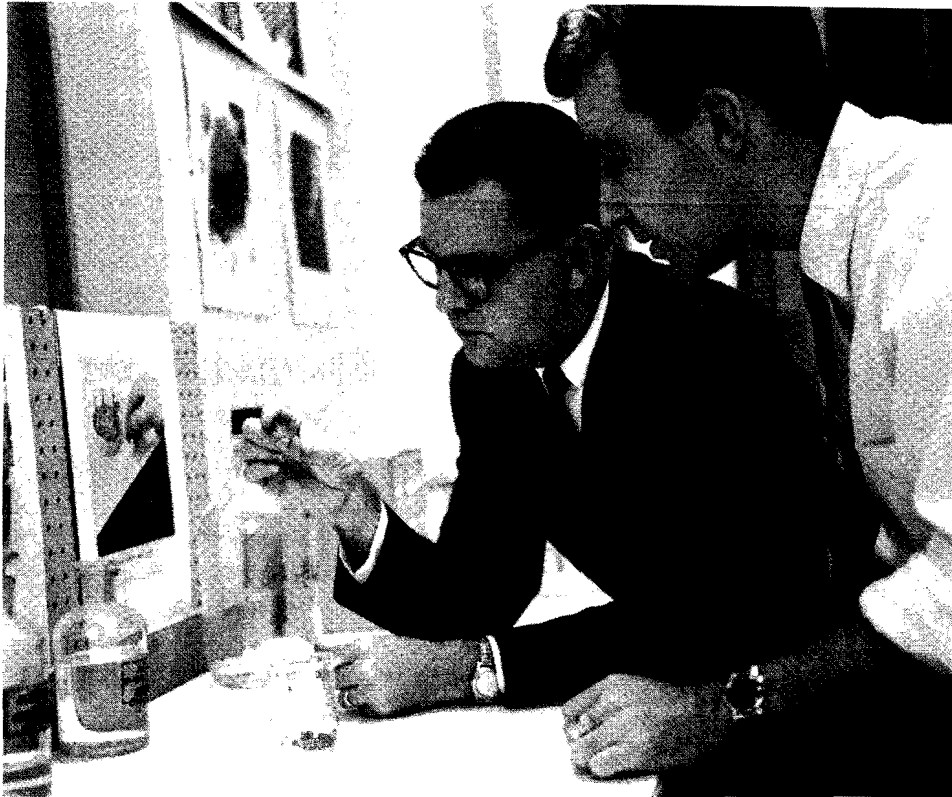
IN PURSUIT OF DISTINCTION

Robert Browning, the apostle of striving, said that "a man's reach should exceed his grasp." Alfred University not only intends to reach out, but also to grasp distinction in the years immediately ahead. We have leased a research vessel, *Lake Diver IV*, with which to embark on aquatic studies on Seneca Lake. This aquatic work will be part of a larger undergraduate program in environmental studies, through which the student will be able to apply his theoretical knowledge in biology or chemistry to such practical regional problems as air pollution and water conservation. Other planned innovations include programs in international studies (with emphasis on Africa and the Middle East), computer science, and social research technology. This latter program will prepare young men and women to hold middle management positions in university and industrial computer centers. Because the University's Department of Art is of exceptional quality, the Liberal Arts College is able to provide an unusual opportunity for students who may wish to earn the Bachelor's degree with a major in fine arts. This major includes the fields of art, literature, music and theater. Equally distinctive and perhaps unique is Alfred's "Operation Opportunity", beamed toward the secondary school student who deserves a second chance to prove that he is college material.

Part of becoming distinctive is becoming relevant. In the years ahead Alfred intends to go where the action is, and to bring the action to itself. Part of this thrust will be a calendar change (effective fall '69) featuring a five-week field term during which the student may study independently in San Francisco, Madrid, or anywhere else in the world. Another part of this thrust is a program to get in touch with the cities. Elsewhere in this catalog you will read about Alfred's new relation to Rochester. This relation represents the initial step in a program to link the University with the metropolitan centers of Western New York. Still another part of this thrust is to bring to the campus a constant flow of individuals who represent the world's major intellectual, cultural, social and political forces. At the new Alfred, students will sit on the floor and debate with the world's leading thinkers—such people as Eric Hoffer, Dean Acheson, Sir Isaiah Berlin, and Barbara Ward.

If you want to be where there is ferment, experimentation, and excitement then you will want to be at Alfred as an undergraduate. But don't come unless you can bring some of your own ideas.

THE COLLEGE



The College of Ceramics, a unit of State University of New York and an integral part of Alfred University, is a unique institution. Its uniqueness lies in its objectives, its organization, and, more particularly, in the breadth of its offerings and the depth of its treatment of subject matter.

Established in 1900 for the purpose of advancing the art and science of ceramics, the College has maintained leadership in the field of ceramic education since that time. Leadership has been maintained through the teaching and scholarly activities of its faculty, through an awareness of developments taking place in ceramics and in ceramic education, and through continuous development of its physical plant as well as of its teaching-research equipment.

The College has, since its beginning, offered programs leading to the Bachelor's degree in Ceramic Engineering, Ceramic Science, and Ceramic Art. The program leading to the Bachelor of Science degree in Glass Science was initiated in 1932.

The first Master's degree in Design was conferred in 1932; the first Master of Science degree, in 1933; and the first Ph.D. degree, in 1958.

The enrollment has increased from 17 in 1900 to 540 at the beginning of the 1967-68 school year. The present student body is composed of students coming from 51 counties in New York State, from 21 other states, and from 11 foreign countries. While the majority of students are working toward the Bachelor's degree, 52 are graduate students seeking advanced degrees. Of the graduate students, 19 are working toward the Ph.D. degree.

LOCATION

The University is located in Alfred, New York, a college town 70 miles south of Rochester, 90 miles southeast of Buffalo, and 70 miles west of Elmira. The campus is easily accessible north-south from U.S. 15, and east-west from N.Y. 17, famous as "America's most scenic highway." The Southern Tier Expressway, now being constructed parallel to N.Y. 17, will soon bring Alfred within four and a half hours of New York City.

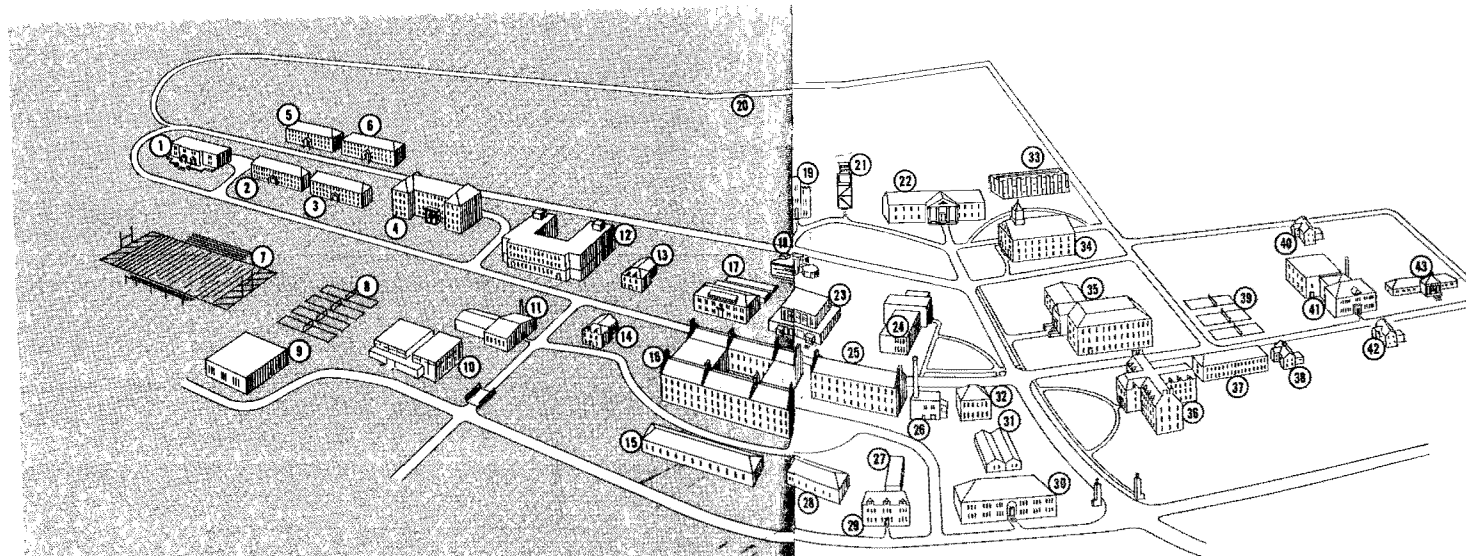
The Erie Lackawanna Railroad serves nearby Hornell. The Short Line bus to New York City stops at nearby Andover, and chartered air service is available from airports at Hornell and Wellsville. A special University bus provides connections with these services. Rochester, 37 minutes by air from New York City, is served by the major airlines.

VISITORS

Visitors are welcome at any time. University offices are open regularly Monday through Friday from 8:30 a.m. to 12:00 noon and from 1:00 p.m. to 4:30 p.m., and guides are usually available. Visitors to the Office of Admissions, in Carnegie Hall, are requested to write in advance for appointments.

KEY TO MAP OF THE CAMPUS

1. Ade Dining Hall (men) 2. Barresi Hall (men's residence) 3. Cannon Hall (men's residence) 4. Bartlett Hall (men's residence) 5. Reimer Hall (men's residence) 6. Tefft Hall (men's residence) 7. Merrill Field 8. North Tennis Courts 9. Ceramic Pilot Plant 10. Proposed Physical Education and Recreation Center 11. Men's Gymnasium 12. Proposed Center of Ceramic Engineering and Glass Science 13. Lambda Chi Alpha Fraternity 14. Proposed site of Ceramic Art and Library Center 15. Research Annex 16. Binns-Merrill Hall (ceramics) 17. Allen Laboratory (biology) 18. Science Center 19. Steinheim Museum 20. Proposed Fraternity Area 21. Davis Memorial Carillon 22. Howell Hall (music) 23. Myers Hall (chemistry, geology, languages, nursing) 24. Rogers Campus Center 25. Physics Hall (history, mathematics, physics) 26. Heating Plant 27. Maintenance Service 28. Ceramics-Art 29. Greene Hall (personnel and graduate school deans, speech and dramatic art, ROTC classrooms) 30. Carnegie Hall (admissions, alumni, business offices, development, president's office, public information) 31. R.O.T.C. Headquarters 32. Kanakadea Hall (history and political science, registrar) 33. New Women's Residence 34. Alumni Hall (campus theater, English) 35. Herrick Memorial Library 36. The Brick (women's residence) 37. Kruson Hall (women's residence) 38. Clawson Residence (women) 39. South Tennis Courts 40. Sayles Residence (women) 41. South Hall and Women's Gymnasium (economics and business, education, psychology, women's physical education) 42. University Health Center



BUILDINGS AND EQUIPMENT



Binns-Merrill Hall, in which most of the work of the College is conducted, is a building of which the College is justly proud. This structure, dedicated in 1953, is rectangular in shape, containing 70,000 square feet of working space especially designed and laid out to serve the particular needs of the College. The building and its equipment represent an outlay of approximately \$2,000,000 and provide the finest and most complete facilities for ceramic education anywhere in the world.

In Binns-Merrill Hall there are a library; laboratories for compounding and testing claywares and glass products; petrography and mineralogy laboratories; chemistry laboratories; lecture rooms; a pottery shop; a wood-working shop; rooms for drafting, drawing, painting and modeling; laboratories for research and development; and a two-story kiln room, 194 feet long.

An annex, which was constructed in 1949, has been equipped to offer a special course in unit operations and to serve as a pilot plant. In this building advanced studies in product development are conducted.

The ceramic laboratories are equipped with apparatus and machinery needed for clay working, glass making, mineral processing, batch mixing, batch preparation, shaping and forming of ware, melting, drying, firing, testing, and mineral analysis. The special laboratories—such as those for chemistry, petrography, spectroscopy, electron microscopy, x-rays, and mass spectrometry—are completely equipped. In addition to the major facilities there are available the many small items of equipment and apparatus essential to special studies and research.

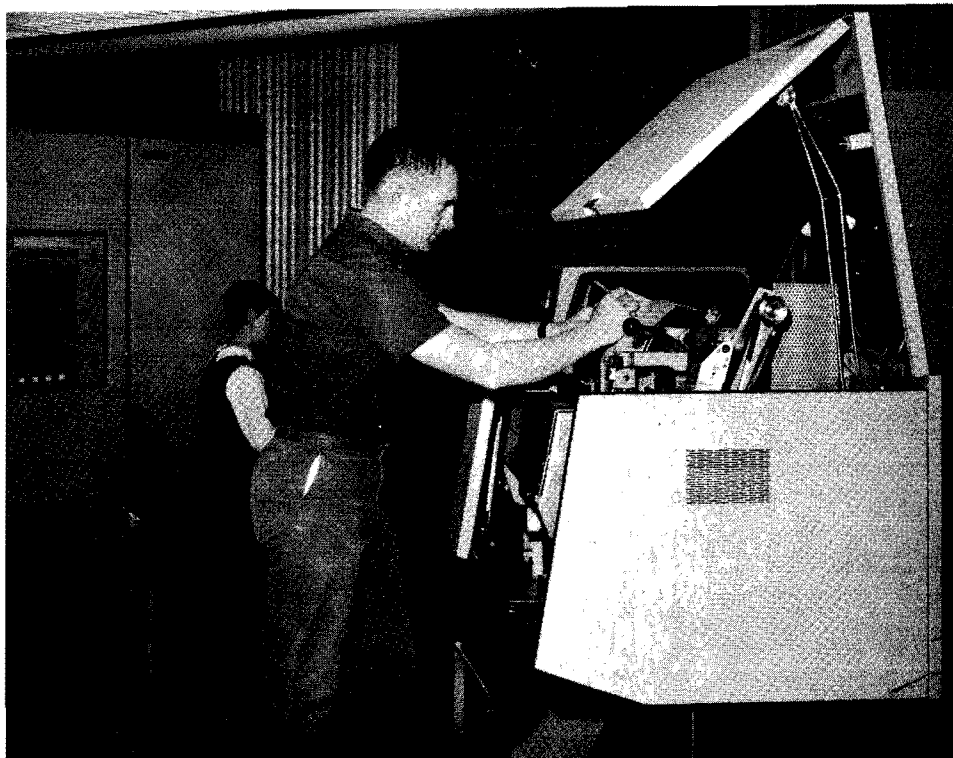
The Computer Center was officially opened on June 21, 1963, equipped with an IBM 1620 computer and auxiliary equipment. Since then, additional equipment has been acquired and recently the 1620 was replaced by an IBM 1800 real-time computer. The center is a significant addition to the teaching and research facilities, providing for research activity and computing instruction in conjunction with the engineering, scientific, and technological courses. Other functions of the Center include aiding in student registration procedures, keeping student records, grading and evaluating student exams, and handling accounting procedures of the College of Ceramics.

In the corridors of Binns-Merrill Hall are various exhibits and displays which indicate the products and the processes as well as the arts and sciences with which the College is concerned. Notable among the exhibits are the Binns Pottery Collection, the Carder Glass Collection, the Silverman Glass Collection, the Locke Glass Collection, the Wesp Collection, and the John R. Fox Collection.

Another building occupied in 1963 provides an air conditioned laboratory approximately 40 by 80 feet with facilities for graduate student research. In the basement of this building there are a glass-working shop and a small machine shop for use by graduate students.

Some classroom, laboratories, and studios are located in the Ceramics Classroom building immediately adjacent to Binns-Merrill Hall. On this site a new College of Ceramics library, auditorium, and ceramic art studios will be constructed in the near future. An additional building of approximately 66,000 square feet is expected to be made available to the College of Ceramics within two years. This building will contain classroom, laboratories, research space, and supporting services for ceramic engineering and glass science.

Some of the research which is under the direction of the College staff is housed in buildings owned by Alfred University.



THE COLLEGE OF CERAMICS LIBRARY



A highly important facility of The College is the ceramic reference library located in Binns-Merrill Hall. Under the guidance of trained librarians, the students find here a wealth of published material relating to all phases of ceramic engineering, ceramic science, art, and design, as well as to the sciences. The library is open seven days and six evenings each week.

The number of bound volumes of art and technical books approximates 45,000. In addition, the library has many unbound bulletins, reprints, pamphlets, and student theses. More than 900 periodicals are currently received on subscription. In addition, a library of 30,000 photographic slides is available for art department activities.

SPECIAL FEATURES OF A CERAMIC EDUCATION AT ALFRED UNIVERSITY

The uniqueness of the College and the importance of its programs have led to scheduled visits of dignitaries. These visitors—representing industry, educational institutions, and government agencies—come from all parts of the globe to meet with faculty, research staff, and students.

Through special organized trips, students are provided with an exceptional opportunity to visit manufacturing plants, research laboratories, educational institutions, libraries, and museums related to their course work.

The College of Ceramics has an active placement program. Company representatives visit the campus to interview students. In addition, career guidance is available through major department heads, personal contact with visitors, and plant tours.

STATE UNIVERSITY OF NEW YORK

The State University of New York, established by the State Legislature in 1948, comprises 68 colleges and centers. At present, 60 conduct classes: four University Centers, two Medical Centers, ten Colleges of Arts and Science, seven Specialized Colleges, six two-year Agricultural and Technical Colleges and 31 locally-sponsored, two-year Community Colleges.

Three additional Colleges of Arts and Science are in varying stages of development. Two four-year campuses, in Nassau and Westchester Counties are now in early planning. The third campus as proposed in an amendment to the University's 1964 Master Plan, would be upper-divisional (junior-senior years) in concept and located in the Utica-Rome-Herkimer Area. Master's level programs will be offered at all three campuses.

The Trustees also have approved establishment of five additional community colleges. Two, in Genesee and Herkimer Counties, are in early stages of organization. Three others, in Clinton, Essex-Franklin and Ontario Counties, are subject to approval of another Master Plan amendment.

State University further comprises the Ranger School, a division of the College of Forestry which offers a 43-week technical forestry program at Wanakena, and the Center for International Studies and World Affairs located at Oyster Bay.

The University offers four-year programs in many fields, including agriculture, business administration, ceramics, dentistry, engineering, forestry, home economics, industrial and labor relations, law, liberal arts and sciences, maritime service, medicine, nursing, pharmacy, professional museum work, public administration, social work, teacher education and veterinary medicine.

Its two-year programs include nursing and liberal arts transfer programs and a wide variety of technical courses in such areas as agriculture, business, and the industrial and medical technologies.

Graduate study at the doctoral level is offered by the University at 12 of its campuses, and graduate work at the master's level at 24 campuses. The University is continuing to broaden and expand over-all opportunities for advanced degree study.

Governed by a Board of Trustees appointed by the Governor, State University of New York comprises all State-supported institutions of higher education, with the exception of the four-year colleges of City University of New York. Each college and center of State University is locally administered. Although separated geographically, all are united in the purpose to improve and extend opportunities for youth to continue their education beyond high school.

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

CERAMICS

"Ceramics" is derived from the Greek word "Keramos," which means "fired earth." Since the beginning of recorded time, man has made and used ceramic products. He began by utilizing naturally occurring clays and has come to use refined clays and every non-metallic inorganic mineral found in the earth's crust.

Ceramics involves the products of past civilizations, the products of the present age of science, and products for the space age that lies ahead. Ceramics is concerned with science (the searching out of new concepts), with technology (the application of science to new products), with engineering (the manufacture and utilization of products for the benefit and advancement of man), and with design (the culture of man). Its products, because they are practically indestructible, are and will continue to be the markers of man's accomplishments through the ages.

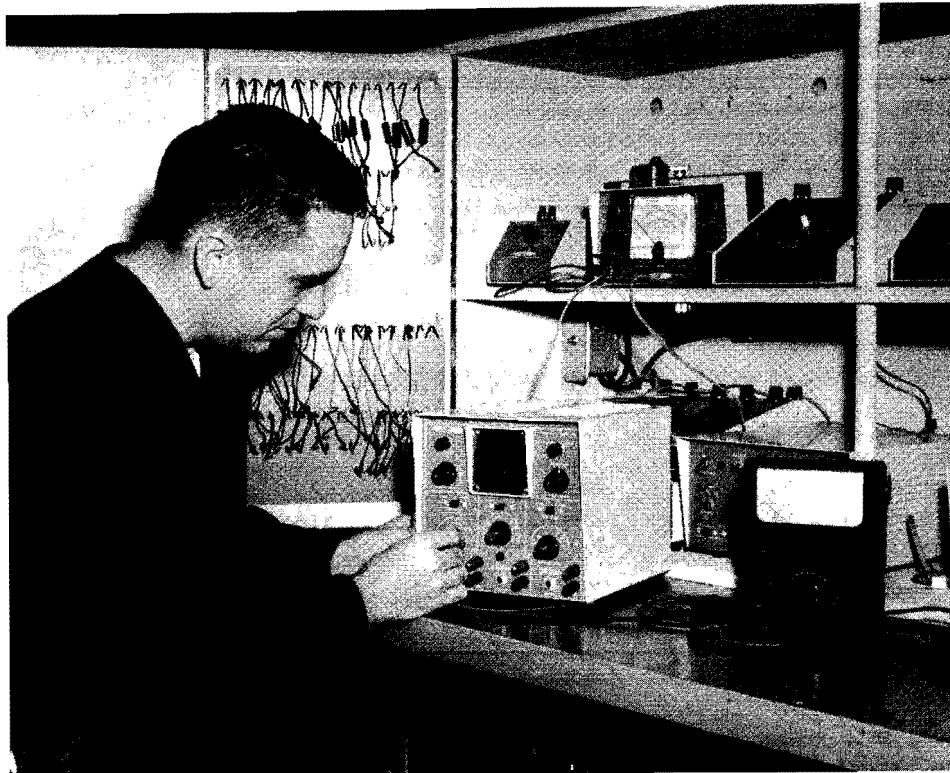
Research is an important element of each of the several aspects of ceramics. Through his research efforts, man is obtaining new and refined products with which to make life more pleasant and scientifically important products with which to advance the boundaries of knowledge.

A PROFESSIONAL EDUCATION IN CERAMICS

The age in which we live is exciting and challenging to the imagination. Although referred to as the atomic or space age, it is also considered to be the age of ceramics. Present and future developments will depend upon the progress in the ceramic field. Ceramic products are the most heat resistant, most durable, and hardest products available to man. Research in these materials has resulted in the development of products having unique electrical, light transmitting, and corrosion resistant properties. An education in ceramics prepares a person for a career in a field that presents many challenges and for a life of rewarding experiences. In pursuing an education in ceramics, a student will be involved with scientifically oriented studies as in engineering or science or in aesthetically oriented studies as in ceramic art.

The undergraduate programs offered in the College of Ceramics, though varying in objectives and in detail, are structured to provide a strong fundamental base and a broad education as well as a concentration in ceramics. Because it is recognized that no entering student is aware of his potential or of the part he will be expected to play in life, the College insists upon a strong background in fundamental subject matter and in the humanities. The College hopes that when a student graduates he will not only be a capable ceramist, but also a person who can and will assume responsibilities in his community.

Many students will end their formal education upon receiving the baccalaureate degree, but an ever increasing number will be going on to graduate school. The programs offered by the College will prepare the student to reach the goals he will set for himself.



The College offers four courses leading to the Bachelor's degree:

CERAMIC ENGINEERING

This program, which is accredited by the Engineers' Council for Professional Development, is directed specifically toward preparation for the profession of Ceramic Engineer. A number of graduates of the program go on to graduate school.

CERAMIC SCIENCE

This program is available to those students who are definitely planning to study at the graduate level. A number of the graduates of this program, however, do go directly into industry.

GLASS SCIENCE

This program is available for those students who are more particularly interested in learning much about glass and who have a desire to enter this field of study. Although most of the graduates of this program enter the glass industry, a number do enter graduate school.

CERAMIC ART

This program, which is accredited by the National Association of Schools of Art, has been developed for those students who wish to work toward the production of beautiful and useful ceramics. It emphasizes the creative processes and is separate as well as distinct from the other programs. Graduates enter industry, set up shops of their own, become teachers, or go on to graduate school.

THE CERAMIC ENGINEER / THE CERAMIC SCIENTIST / THE GLASS SCIENTIST / THE CERAMIC DESIGNER

The Ceramist of the past concerned himself with clays, feldspar, quartz, limestone, soda ash, and a limited number of other minerals which were used in the manufacture of clay products and glass.

From his knowledge of these materials—how they could be blended—and how they reacted during heating—he became a specialist in the manufacture of building brick, sewer pipe, terra cotta, pottery, window and art glass, floor and wall tile, sanitary ware, and fireclay refractories.

The Ceramist of today concerns himself with every non-metallic, inorganic mineral available and with the development of new and better

a. Portland Cement for: faster and better road building, high temperature applications, use in contact with chemically active materials, better concrete structures.

b. Refractories to: withstand ever-increasing temperatures, overcome reaction with melts of new metals and alloys, resist more effectively the corrosive action of molten glass, withstand severe heat shock, help make better jet engines and rockets, stand up under heavy loads at high temperatures, be suitable for use in atomic energy applications.

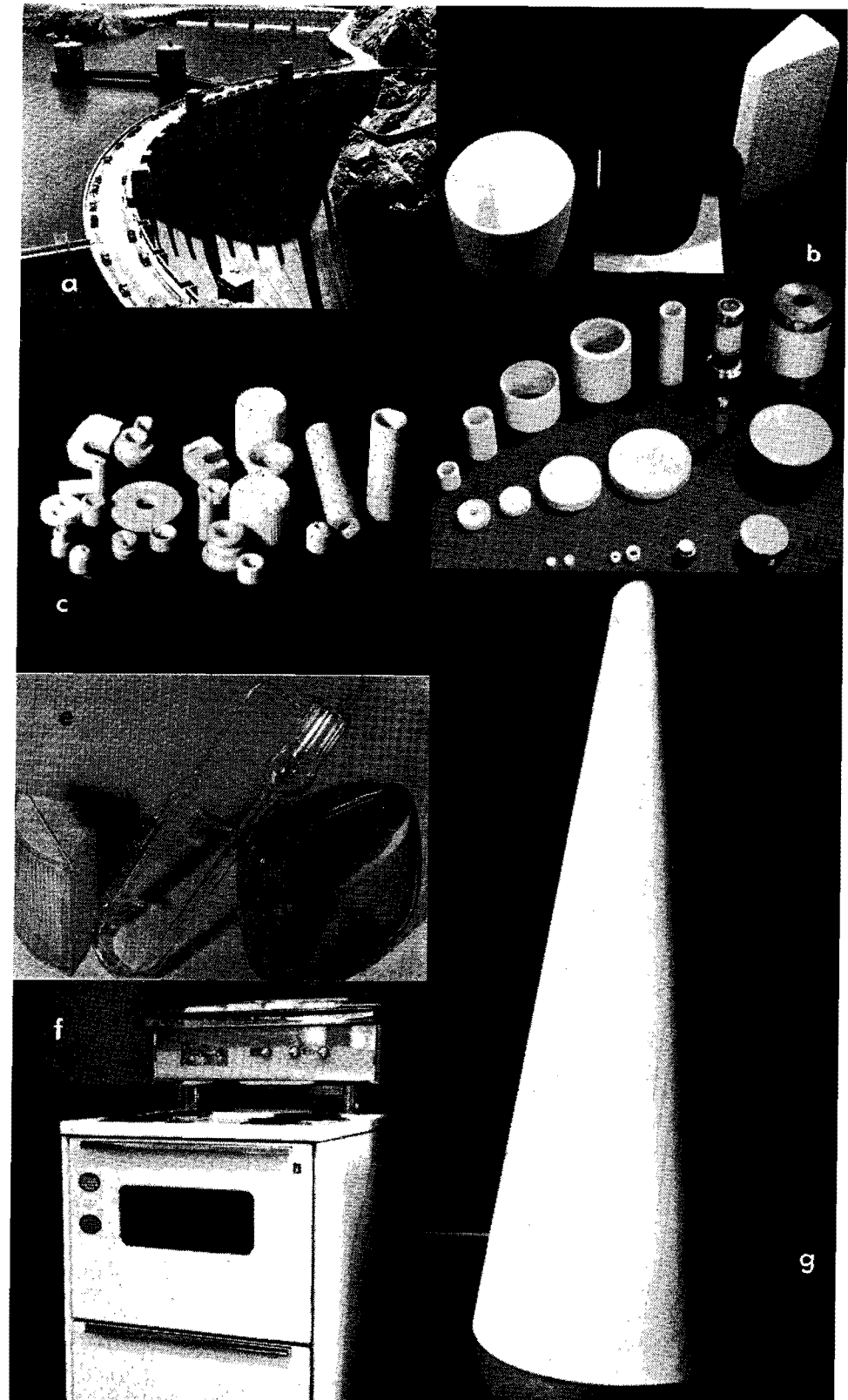
c. Specific Products for: textile, metal polishing, electronics, oil, printing, atomic energy applications.

d. Dielectrics for: radar equipment, radio equipment, calculating machines, television equipment, ultra-high frequency application, electronic devices of all kinds.

e. Glasses for: new optical systems, reflecting signs and markers, television applications, structural uses, electrical light fixtures, heating elements, utensils.

f. Enamels for: use in jet engines, chemical engineering equipment, new household appliances, new jewelry applications, architectural applications.

g. Ceramics for: space vehicles.



GRADUATE STUDY

As knowledge is gained and an awareness of the immensity of man's knowledge develops, some students, regardless of the program they are following, are determined to gain more than can be accomplished during the baccalaureate years. Realizing this, the College has developed each of its programs in such a manner as to permit those students who show academic promise to continue their studies at the graduate level at other colleges or at the College of Ceramics (see Graduate School Catalog).

UNDERGRADUATE AND GRADUATE RESEARCH

Studies at the College are carried on in an atmosphere of research, and each undergraduate is required to conduct his own research project. As will be appreciated, this excursion into research cannot be one of great depth. However, it suffices to give the student an insight into the ramifications of original research as well as of the rewards of such efforts.

Undergraduate students who desire more than the required experience in research have unsurpassed opportunities to gain this experience. Faculty members and graduate students, all of whom are involved in some research, are anxious to have the eager, capable students consult with them, study with them, and, on many occasions, work with them.

Members of the Teaching Staff of the College work closely and cooperatively with undergraduate students, graduate students, and with other members of the faculty. They carry on original research, each in the area of his own specialization, supervise undergraduate and research theses, and direct sponsored projects.

Research is sponsored by government agencies, by industrial concerns, by organizations, by foundations, by the State of New York, and by the College. Monies received through these sponsorships go to support the educational programs of students. Many undergraduate and graduate students work on sponsored projects, gaining experience as well as financial assistance.

Among the government agencies sponsoring research are the National Aeronautic and Space Agency, National Institute of Health, Department of Health, Education, and Welfare, and the National Science Foundation. Programs may be of a fundamental nature only, but may also have implications for the utilization of new ceramic materials in advanced space and weapons systems.

Among the subjects under study are special properties of semi-conductors, the role of defect structure in catalysis, the correlation between the physical and chemical properties of oxide surfaces, the principles of fuel-cell operation, the dielectric and mechanical losses in solids, the elastic and anelastic properties of polycrystalline ceramics, and the effect of grain boundaries on the thermal conductivity of ceramic materials.

Research being conducted under sponsorship of private industry, organizations, and foundations includes studies of defect structure in relationship to the chemical, physical and mechanical properties of ionic solids, infrared transmitting ceramics, surface properties of silica and alumina co-oxides, high temperature friction materials, the effect of moisture absorption on moisture expansion, lead glass systems, strength of glass, and diffusion of oxygen into glass.

Research sponsored by the State of New York involves studies related to the utilization of New York State minerals, New York State products, new ceramic products, new industries, new manufacturing processes—as well as studies relative to improving teaching and research techniques. Among studies under way are the limestones of New York State, the economical utilization of clays, the development of lightweight material, the development of lightweight products, the differential thermal analysis of minerals, solid state physics, surface chemistry of ceramic materials, and the properties of single crystals.

The Ceramic College is fortunate in having the close cooperation of the Ceramic Association of New York. The Research Committee of this organization acts in an advisory capacity to members of the faculty, and their recommendations contribute greatly to the organization and planning of the research program. Through the Ceramic Association of New York, staff members are able to obtain the advice of the leading ceramic industrialists of New York as well as the active support of their companies.

The demand for persons trained in research methods and the research attitude as well as in a forward-looking, developmental atmosphere is increasing. The College of Ceramics plans on continuing to contribute materially to this extremely important phase of education.

Support of the research program by the Federal and State governments and by industry makes possible the granting of support to selected undergraduate and graduate students in their thesis work. Some of these fellowships are held by seniors and graduate students on a part-time basis, whereas others are held by full-time research associates. Stipends are commensurate with the experience and ability of the holders and with the time that is devoted to the project under study. Full-time research associates are permitted to take a maximum of twelve semester hours of graduate course work per year.

DEGREES



Graduation from the College and the awarding of any degree depend upon the successful and satisfactory completion of the prescribed course of study contained in the program elected. No substitution for prescribed courses is permitted, but the student is permitted, through elective courses, to study a limited number of subjects which permit him to satisfy his individual desires. The University reserves the right to withhold a diploma for poor scholarship or for other reasons.

BACHELOR'S DEGREES

Bachelor of Science

The degree of Bachelor of Science (B.S.) is conferred on those students who complete, with a cumulative grade point index of 2.00, the course of study described and given in detail on pages of the catalog under *Ceramic Engineering*, *Ceramic Science*, and *Glass Science*. The name of the curriculum followed is stated on the diploma.

Bachelor of Fine Arts

The degree of Bachelor of Fine Arts (B.F.A.) is conferred on those students who satisfactorily complete, with a cumulative grade point index of 2.00, the prescribed course of study described and given in detail on pages of this catalog, under *Ceramic Art*.

ADVANCED DEGREES

ADMISSION

To be eligible for admission to the Graduate School, an applicant must have received the baccalaureate degree from an accredited collegiate institution, and his undergraduate record must indicate clearly that he is able to perform creditably at the graduate level. Applicants for admission should direct their correspondence to the Dean of the Graduate School, who will coordinate the processing of the applications. The Admissions Committees reserve the right to admit or reject applicants to the various graduate programs.

Of the undergraduate students at Alfred University, only seniors in good academic standing may be permitted to enroll in graduate (500 or over) courses. For each enrollment, the permission of the instructor is required. Seniors who have been admitted to the Alfred University Graduate School may, with permission of the Dean, take certain courses for graduate credit during the last semester of the undergraduate program.

MASTER OF SCIENCE DEGREE

The Master of Science degree may be earned in the fields of Ceramic Engineering, Ceramic Science and Glass Science in one or two years by well-qualified graduates of the College of Ceramics or the appropriate programs at other accredited institutions. Where the undergraduate program differs significantly from that of the College of Ceramics, students will be required to bring their backgrounds up to that level, and to demonstrate that they have done so. See also the catalog of The Graduate School.

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

Each of the programs leading to the M.S. degree requires a minimum of 30 semester hours of graduate credit. Some credit may be transferred from other approved institutions, provided they are of graduate level, appropriate to the student's Alfred program, and at grade B or better.

Two plans are available within each department for satisfying the necessary credit requirements:

Plan A. 30 credit-hours, including an experimental thesis for 12 credit-hours.

Plan B. 30 credit-hours, including a three credit-hour technical report.

At least one year of residence is required, and all work for the degree must be completed within a period of six years unless special permission is granted. A candidate for the degree must pass successfully an oral examination in his major field, based on his thesis or technical report.

Further information concerning the M.S. degree is available in the Graduate School catalog and the Manual for Master of Science students which is presented to entering graduate students.

MASTER OF FINE ARTS DEGREE

Objectives of the program leading to the Master of Fine Arts degree are to help the mature student to build the knowledge, experience, and skills of the ceramic medium that best support works of the imagination; to prepare him for a creative way of life in the ceramic arts or for a professional career in design; or for the college level responsibilities of artist-teacher in the ceramic disciplines.

To be eligible for admission a student must have been graduated from an accredited institution and received the Bachelor of Fine Arts degree or the Bachelor of Arts degree, with the equivalent of 65 credit hours of professional art training. A better than average undergraduate record must be presented along with appropriate recommendations. The submission of a portfolio and slides of undergraduate work as well as an on-campus interview are necessary before admission to graduate study may be granted (exceptions as to the interview may be made where travel distance is great).

Requirements for the Master of Fine Arts degree include a minimum of two years in residence, 68 credit-hours at the graduate level, a thesis, a project in ceramics, and a final evaluation by the Graduate Committee.

All work for the degree must be completed within a period of six years unless special permission is granted. Further information concerning the M.F.A. degree is available in the Graduate School catalog and the Manual for Master of Fine Arts students which is presented to entering graduate students.

Industrial fellowships involving a six months' internship in the design laboratory of University-approved industrial firms, along with graduate assistantships, are available after a minimum of one semester or one six-week summer session in residence. The Alfred summer session is strongly recommended as useful orientation to graduate study. At the discretion of the Graduate Committee, credit earned during this session may or may not be applied toward the Master of Fine Arts degree.

DOCTOR OF PHILOSOPHY DEGREE

The Doctor of Philosophy degree is offered in the field of ceramic science.

The normal residence requirement is three years, but in no instance will it be fewer than two years. As with the Master of Science degree, due consideration will be given to graduate work completed at another institution, but transfer credit cannot be expected for courses in which a grade lower than "B" was obtained.

Ninety hours of credits beyond the requirements for the Bachelor of Science degree must be earned. Of these, a minimum of 45 credit hours must be in regular course work; the remainder may be earned as thesis credit hours.

Three hours each of advanced calculus and differential equations are required as undergraduate courses for admission to the program, and, if lacking, should be made up as quickly as possible. Graduate credit is not given for these courses.

Eighteen hours of credit in specified courses in chemistry, physics, mathematics, and ceramics are required as well as attendance at graduate seminars. Other courses may be selected as follows: at least 15 hours in courses carrying a 500 number, and the remainder from 500 and 400 courses. A listing of the courses will be found in the catalog. Students on this program are expected to maintain a minimum index of 3.00 in course work, and not more than 9 hours at "C" will be accepted.

Before being admitted to candidacy a student must have

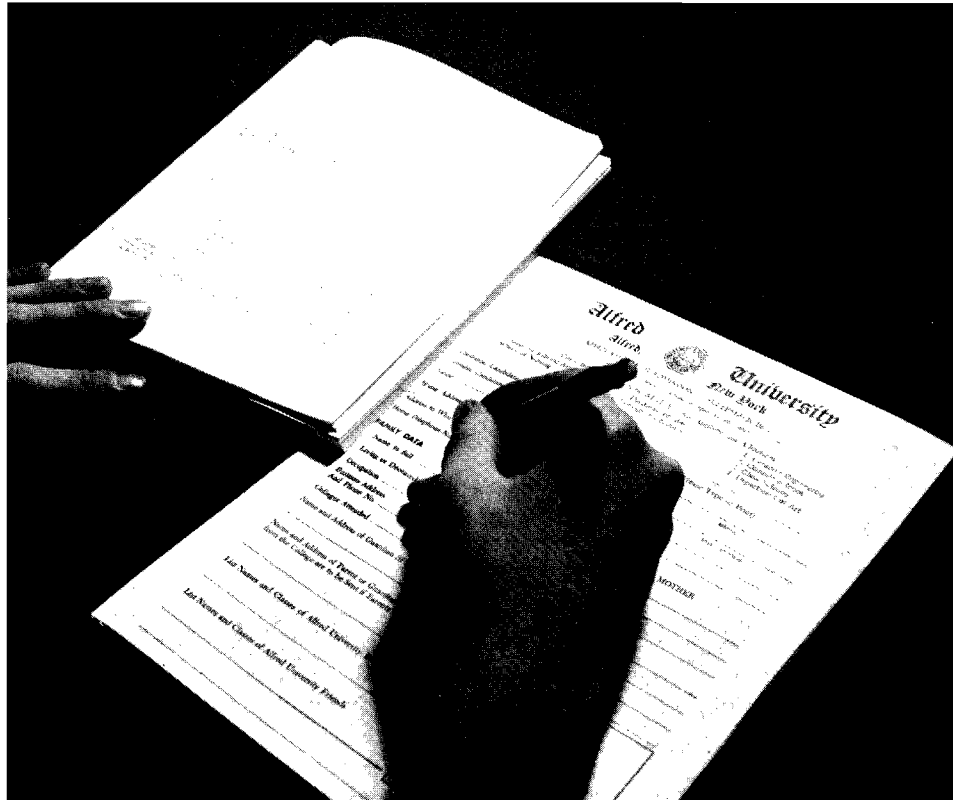
1. made up all deficiencies stated at the time of admission.
2. demonstrated a reading knowledge of at least two foreign languages.
3. passed a comprehensive examination.
4. received approval for his thesis outline.

The Ph.D. degree will be conferred only on those who have demonstrated competence in the field of ceramics, met the foregoing general requirements, and submitted as well as orally defended a thesis.

More detailed instructions and descriptions of requirements are available to students when they begin residence, in the form of a manual for Doctoral Students.



ADMISSIONS FINANCIAL AID, EXPENSES



ADMISSION TO THE UNDERGRADUATE DEGREE PROGRAMS

The Admissions Staff is concerned with the pattern of life which each individual applicant is developing for himself. The admissions officers interpret the University to the prospective student; the student must then decide for himself whether Alfred's program for learning and living should become a part of his life.

POLICY

Admission to Alfred University is selective, and the number of entering freshmen is limited to the available accommodations. The University desires students from diverse backgrounds and geographic areas.

The Admissions Committee bases its selection on the following criteria: character, academic background and potential, extra-curricular interests, motivation for a college education, and the desire of the applicant to attend Alfred University, a residential college.

Special consideration will be given direct relatives of Alfred University alumni.

REQUIREMENTS FOR ADMISSION

A minimum of 16 units of academic work is recommended for admission to Alfred University. Engineering and science candidates should have completed courses in chemistry, physics, and preferably four years of academic mathematics. Students applying for admission to the engineering or science program in the College of Ceramics are permitted to have 16 units without a foreign language if high achievement is attained from a college preparatory program including four units each of English, laboratory science, mathematics, and social studies.

Ceramic Art candidates may include 3 units completed in art, design, and ceramics as acceptable substitutes in meeting the minimum standards. Upon request, a portfolio will be required.

COLLEGE OF CERAMICS

CERAMIC ENGINEERING, CERAMIC SCIENCE, GLASS SCIENCE

- (1) 4 units of English
- (2) 3 units of academic mathematics (4 units preferred)
- (3) 2 units of laboratory science to include chemistry and physics
- (4) 2 units of social studies and history
- (5) at least 2 units of a modern or classical foreign language are recommended

The remainder of the 16 minimum academic units should be earned within the same fields listed above. Foreign language may be omitted if high achievement is attained from a college preparatory program including four units each of English, laboratory science, mathematics and social studies.

CERAMIC ART

- (1) 4 units of English
- (2) at least 2 units of a modern or classical foreign language are recommended
- (3) 3 units of academic mathematics
- (4) 1 unit of a laboratory science
- (5) 2 units of social studies and history

The remainder of the 16 minimum academic units required should be earned with the same fields listed above. Ceramic Art candidates may include 3 units completed in art, design and ceramics as acceptable substitutes in meeting the academic requirements for admission. Upon request, a portfolio will be required.

PROCEDURE

1. APPLICATION—The Director of Admissions will supply prospective students with the necessary publications and application forms. No application will be reviewed by the Admissions Committee until it is complete.

The completed application form must be accompanied by a non-refundable \$10.00 application fee.

Form 2 is the official record of the candidate's secondary school career and should be completed and returned to the Admissions Office by the candidate's principal or guidance counselor at the time the application is filed. The 8th semester grade report, filed by the appropriate secondary school official, is necessary before final acceptance is granted.

2. THE INTERVIEW—It is assumed that an on-campus interview will be part of the admissions procedure. If an applicant cannot appear for such an interview because of extenuating circumstances, he should write to the Director of Admissions. Interested students are welcomed at any time with an appointment made *in advance*. After February 1, interviews are granted after the student has filed credentials. Preferred interview days are Monday, Wednesday, and Friday of each week.

3. ENTRANCE EXAMINATION—Alfred University is a member of the College Entrance Examination Board and uses the Scholastic Aptitude Test (morning program) and the English Composition Test* (afternoon program) as the *required* entrance examinations. *In addition, out-of-state Ceramic Engineering candidates are required to take the Achievement Tests in Mathematics, Level I or Mathematics, Level II and Chemistry.*

The Scholastic Aptitude Test is given five times a year, but all candidates for admission are urged to take the required tests on the December or January testing dates.

Registration forms and general information for these tests may be obtained from the secondary school principal or guidance counselor at least one month prior to the testing date.

* Not the writing sample.

EARLY DECISION

Alfred University employs an Early Decision Plan which enables the outstanding applicant to complete college plans early in the senior year. Under this plan, the applicant must file his application by November 1, indicating "Early Decision" at the top of the first page. In addition, the academic record (Form 2) must be completed through the junior year and the required College Entrance Examination Board tests taken in March, May, or July prior to the senior year. The secondary school official must certify that only one application is filed. If accepted under this program, the student must submit the advance deposit within ten days of acceptance. As with all regular candidates, this acceptance is contingent upon successful achievement during the senior year. Candidates for Early Decision who are also candidates for financial assistance will be notified of their award at the time of acceptance.

ACCEPTANCE

1. NOTIFICATION—Committee action, except for early decision, occurs primarily in February, March, and April. All candidates are accepted for admission on a provisional basis with final acceptance being granted after notification of successful completion of the secondary school experience and the return of the health form sent with the provisional acceptance.

2. CANDIDATE'S REPLY DATE—Alfred University subscribes to the Candidate's Reply Date of the College Entrance Examination Board for all regularly accepted candidates.

3. ACCEPTANCE DEPOSIT—A \$50.00 deposit is required of all accepted freshman and transfer applicants and is not refundable should the candidate withdraw prior to registration. This deposit is payable in accordance with provisions governing the Candidate's Reply Date outlined above. An applicant accepted for admission after May 1 must submit the deposit within two weeks of notification. This deposit reserves a place in the entering class. It is not applied to any term bill. The deposit is refunded to the enrolled student, less any unpaid charges, after graduation from the University or following the student's withdrawal if done according to the official prescribed procedure.

4. HOUSING—All freshmen and sophomores live in University dormitories, and meals are served in dormitory dining rooms. The Office of the Dean of Students is responsible for the assignment of rooms to accepted students in August of each year.

5. ORIENTATION AND REGISTRATION—Orientation week at Alfred University is planned to acquaint entering students with faculty, fellow students, the educational program, and the traditions of the University.

ADVANCED PLACEMENT AND CREDIT BY EXAMINATION

To encourage students with outstanding ability and enterprise, Alfred University has adopted the following policies relative to advanced placement and credit by examination.

Students who have participated in the College Board Placement Program, New York State College Proficiency Examination, or in some equivalent program before entering college may, after admission to the University, present the pertinent records to a review committee consisting of the Dean of the College of Liberal Arts, the Dean of the College of Ceramics, and the Registrar, who will, on the advice of faculty members in the areas most concerned, judge the student's accomplishment. (The Dean of the College of Liberal Arts and the Dean of the College of Ceramics will alternate as chairman of this review committee). If such records have been filed with the Admissions Office, they will normally come to the attention of the committee after a student has been admitted.

Committee action may

- (1) grant Alfred University academic credit and recognize the earlier work as satisfying prerequisites when appropriate for advanced courses, or
- (2) allow earlier work to satisfy prerequisites although no credit is granted, or
- (3) deny credit or prerequisite recognition of earlier work.

A student will not be permitted to repeat for credit any work for which the review committee has granted credit.

The review committee will also consider petitions (normally filed with the Registrar) from matriculated students wishing to be examined for credit in undergraduate courses which they have not taken. The review committee, with the advice of the faculty members in the areas most concerned, will decide whether each such request is well substantiated and, if so, will call on the department involved to examine the student by methods satisfactory to the committee.

The following regulations apply to matriculated students seeking the privilege to challenge a course for credit and/or advanced placement:

- (1) All applications for challenge should be made in writing to the Registrar.
- (2) A student may challenge a course only once.
- (3) A student may not challenge a course which he has previously taken—either at Alfred University or elsewhere.
- (4) A student may not challenge a course after he has been officially registered in that course.
- (5) A student may not challenge a course which he has previously audited.
- (6) Normally, a student's privilege to challenge shall fall within the regulations governing a normal study program.
- (7) A student may not challenge any course required for graduation during the last semester in residence.
- (8) A student shall be charged a fee of \$15.00 for each challenge examination.

Credit earned in the program of advanced placement and credit by examination (work of C level or better required) shall be recorded with a grade of P which is not figured in a student's index. No more than 32 credits shall be granted to any student under these procedures. Credit may not be claimed under these procedures for proficiency in studies which are normally part of the high school program.

Although a matriculated student is charged a fee of \$15.00 for each challenge examination taken at Alfred University (see number 7 above), there will be no fees charged by Alfred University for advanced placement examinations taken under other auspices prior to entrance.

ADMISSION OF TRANSFER STUDENTS WITH ADVANCED STANDING IN UNDERGRADUATE PROGRAMS

Students from other approved institutions wishing to transfer to the University are encouraged to file a transfer application provided they are in good academic and social standing. Those students applying from junior or community colleges are eligible for financial aid consideration. Transfers from four-year institutions must be enrolled at Alfred University for one academic year to be eligible for financial aid. The admission of transfer students is subject to the following regulations:

1. Complete transcripts of all secondary school and college work completed should be forwarded to the Director of Admissions with the application form.
2. Credit will be granted for equivalent courses in which the grade of C or higher is earned.
3. Transfer students are subject to the same standards of selection as entering freshmen. If the appropriate tests of the College Entrance Examination Board have been taken, the scores should be forwarded to the Director of Admissions. If these tests have not been previously taken by the transfer candidate, upon request the applicant must make arrangements to do so before review of the application will be made.
4. All final acceptances are contingent upon the successful completion of the student's present academic program.

ADMISSION TO GRADUATE STUDY

To be eligible for admission to the Graduate School, an applicant must have received, or be eligible to receive, the baccalaureate degree from an accredited college or university. His undergraduate record must clearly indicate that he can perform creditably at the graduate level in the academic area of his choice.

Applicants for admission to graduate studies should correspond with the Dean of the Graduate School. Members of the Admissions Committees and Faculties reserve the right to select candidates in relation to the studies to be pursued.

Of the undergraduate students at Alfred University, only seniors in good academic standing may be permitted to enroll in graduate (500 or over) courses. For each enrollment, the permission of the instructor is required. Seniors who have been admitted to the Alfred University Graduate School may, with permission of the Dean, take certain courses for graduate credit during the last semester of the undergraduate program.

OPERATION OPPORTUNITY

Operation Opportunity is a summer academic program at the University which gives the potential college "reject" a chance to prove to himself, his family, and to the University that he is both ready and able to embark on a strong academic program in one of the University's undergraduate colleges. Several categories of students fall under the "rejectionable" heading: the underachiever, the overachiever (a student whose academic record is superior to his predicted capacity), the student whose record is poor because of personal problems, and the veteran of the armed forces who has been away from formal education for a period of time. Complete information regarding the *Operation Opportunity* program may be attained by writing: *Director, Operation Opportunity, Box 765, Alfred University, Alfred, New York 14802*

OTHER ADMISSIONS

For Summer School and various special programs which students may attend without becoming candidates for degrees, there are no formal admissions procedures. However, the University will expect and require suitable preparation in each instance. Any student permitted by the Admissions Office to take work without being a degree candidate is classed as a special student. As such the student cannot assume that he will automatically be entitled to degree candidacy if he continues in his studies.

Part-time students are identified as those wishing to be candidates for a degree but who will be unable to pursue a full-time academic course of study. Such applicants must file an application and credentials with the Admissions Office indicating "Part-time Student" at the top of the application form.

FOREIGN STUDENTS

Alfred University has always welcomed students from other countries and has many nationalities represented in its student body. It is advantageous for foreign students to make application well in advance to allow for evaluation of credentials and travel arrangements. Test of English as a Foreign Language is required of all students for whom English is not their native tongue.

TUITION, FEES AND EXPENSES*

| | | | | |
|---------|----------------------|---------|-------|-------|
| TUITION | New York Residents | Tuition | Fees | Total |
| | Undergraduates | \$400 | \$180 | \$580 |
| | Graduates | \$600 | \$125 | \$725 |
| | Out of State | | | |
| | Undergraduates | \$600 | \$180 | \$780 |
| | Graduates | \$600 | \$125 | \$725 |

The effect of the new schedule on NEW YORK STATE RESIDENTS will be lessened by Scholar Incentive Program grants and by grants-in-aid provided by the College as follows:

| | Income* | Tuition | Tuition less SIP Grant** and Grants-in-Aid | College Fees | Total |
|--|-------------|---------|--|--------------|-------|
| UNDER- GRADUATE INSTRUCTION | † \$ 0-1800 | \$400 | \$ 0 | \$180 | \$180 |
| | \$1801-7499 | \$400 | \$200 | \$180 | \$380 |
| | \$7500-plus | \$400 | \$300 | \$180 | \$480 |
| GRADUATE INSTRUCTION First Year | † \$ 0-1800 | \$600 | \$ 0 | \$125 | \$125 |
| | \$1801-7499 | \$600 | \$300 | \$125 | \$425 |
| | \$7500-plus | \$600 | \$400 | \$125 | \$525 |
| GRADUATE INSTRUCTION Subsequent Three Years | † \$ 0-1800 | \$600 | \$ 0 | \$125 | \$125 |
| | \$1801-7499 | \$600 | \$200 | \$125 | \$325 |
| | \$7500-plus | \$600 | \$200 | \$125 | \$325 |

*Net taxable family income of each student.
**Scholar Incentive Program.
†Students in this family taxable income group will receive, in addition to the SIP grant, a grant-in-aid of \$100 each semester from the College of Ceramics.

LEGAL RESIDENCE

To be eligible for resident charges or to receive a Regents scholarship, Regents fellowship, or scholar incentive award, the student must be a legal resident of the State of New York (Foreign visitors holding student visas are not residents).
In addition, to be eligible to receive a scholar incentive award, the student must not only be a legal resident of New York State, but he must have been such a resident for a period of at least 12 months immediately preceding the beginning of the semester for which he is applying for assistance. A candidate for undergraduate assistance who

is now a resident may also qualify if he was a resident during his last two semesters of high school. Similarly, a candidate for post-graduate assistance who is now a resident may qualify if he was a resident during his last two semesters of undergraduate study and continued such residence until matriculation in a graduate program.
If the student is under 21 years of age and single, his legal residence is the address of his father or mother or legal guardian.
If the student is married, he may establish his own residence. However, residence is not gained or lost by attending college. The legal residence of a college student is the residence prior to the current period of attending college, unless otherwise demonstrated by specific action changing such residence, such as paying New York State resident income tax or voting in New York State.
If a student has any questions concerning these regulations, he should consult the Dean of the College.

| ESTIMATED ANNUAL EXPENSE | (These expenses may be reduced by financial aid available to the student) | | |
|--------------------------------|--|--------------------|----------------------|
| | Undergrad. N.Y. State Res. | Out of St. Res. | All Grad. Std. |
| College of Ceramics | Room (per student) | \$ 450 | \$ 450 |
| | Board | 550 | 550 |
| | Tuition | 400 | 600 |
| | General Fees | 180 | 130 |
| | Other Fees | 100 | 70 |
| | Books ¹ | 50 | 60 |
| | | \$1,730 | \$1,930 |
| | | | \$1,860 |

Tuition is charged for courses repeated for any purpose, with charges regulated by the cost of accessory instruction.

Notes On Expenses

The Tuition for full-time students in the College of Liberal Arts and the School of Nursing covers the library fee, use of the gymnasium, home athletic games, and the Campus Center fee. (These items are covered through the General Fee in the College of Ceramics). Residence halls students are charged \$28.00 per year for linen service.
Special Fees are also charged to full-time undergraduates in all collegiate units. These fees cover student assessments for the Fiat Lux (student newspaper), the Kanakadea (student annual, the Alfred Review (student literary magazine) Student Senate, the University Health Fee and the University Cultural Programs. These fees total approximately \$100.00 per year. Nursing students are assessed for a lesser amount when off campus in their second and third years.

¹Design students also pay a \$100 deposit for supplies.

*Tuition, fees, and charges for board and room are all subject to change without notice.

The University Health fee covers the services of the University physician and nurses for a maximum of two weeks in the University Health Center. A fee of \$4.00 per day is charged for health center care beyond two weeks and the costs of such items as prescriptions, serums, and special drugs are personal expenses. The fee also covers accident and sickness coverage in a hospital of the student's choice. A pamphlet will be distributed at registration time describing in detail the University's student health program.

Special fees, deposits, and other special assessments as necessary for certain programs are listed under the specific course and program descriptions in this and other Alfred University catalogs.

The \$15.00 application fee has been discussed as part of the admissions procedure. Special students not admitted through regular application procedures are charged this fee upon first registering in the University. The \$300.00 acceptance and housing deposit required of all students matriculating as full-time degree candidates is also discussed in detail under admissions. There is a \$5.00 fee for late registration.

A graduation fee of \$15.00 is charged to everyone receiving a degree.

PAYMENTS

A bill covering all charges for a semester is presented to each student at registration.* Semester bills are due when issued and must be paid before the student is eligible to attend classes. Special arrangements may be made for the total bill to be mailed to parents for immediate payment.

Rebates* in the regular academic year are as follows: For students withdrawing during the week of registration, 100 percent of tuition, and student fees (the \$50 acceptance deposit will be withheld on such a withdrawal); for a withdrawal during the first week of classes, 80 percent; during the second week, 60 percent; third week, 40 percent; fourth week, 20 percent. There will be no rebates for withdrawals after the fourth week. There will be no rebates on fees charged for University room, whereas board fees are refunded on a pro-rata basis.

Special procedures for refunds have been adopted for men called into military service prior to the end of a semester.

THE MIDLAND TIME PLAN

Some parents prefer to pay on a time-payment basis. The Marine Midland Banks in New York State have accordingly developed the Midland Time Plan for budgeting the educational expenses of the normal school year in convenient monthly installments. Any item of cost generally recognized by educational institutions as being directly related to the student's education may be included in the loan. Such items include, but are not necessarily limited to, tuition, room, board, fees, books and fraternity, sorority or similar expenses.

*The billing and rebate arrangements for part-time graduate students and for students attending Summer School differ in certain details.

FINANCIAL AID

New York State offers various types of financial assistance to qualified college students who are State residents. It is very important that students seeking such aid obtain full information and meet promptly each application deadline.

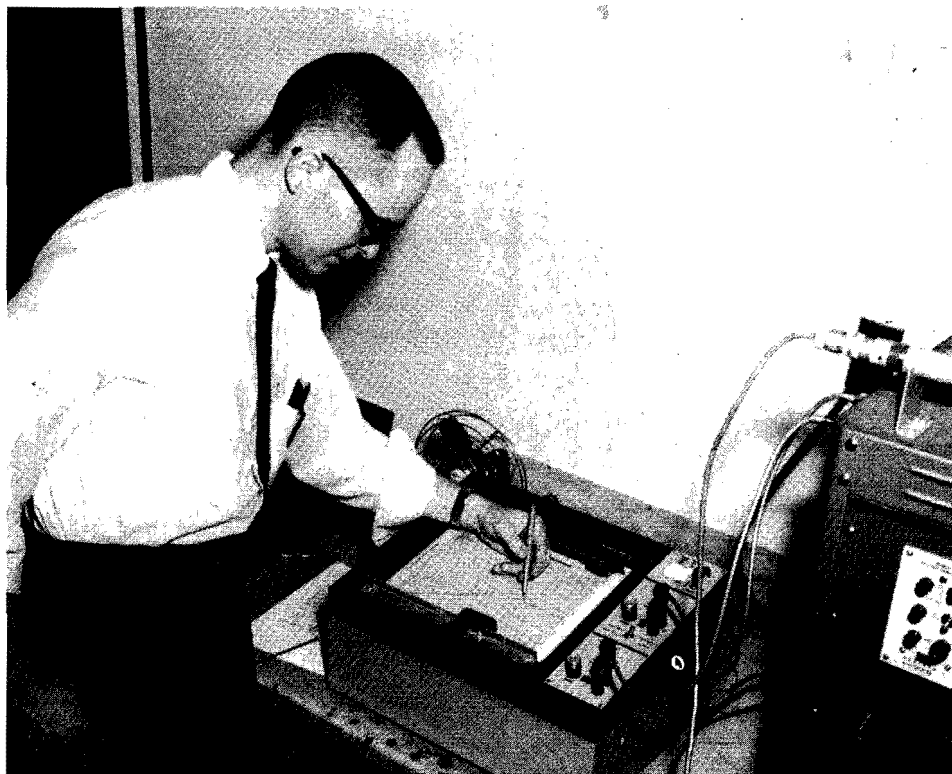
SCHOLAR INCENTIVE PROGRAM. Applications should be filed before July 1 for each academic year, but will be accepted up to December 1. Applications for the spring semester have an April 1 deadline. *Annual* application is required.

REGENTS COLLEGE SCHOLARSHIPS FOR UNDERGRADUATES. Candidates should seek directions from their high school principal and/or guidance counselor.

Information on all of the above items may be obtained by writing Regents Examination and Scholarship Center, New York State Education Department, Albany 12224, New York. Students seeking New York State guaranteed loans should apply to New York Higher Education Assistance Corporation, 111 Washington Avenue, Albany 12210, New York.

SCHOLARSHIPS. Richard H. Pass Memorial Scholarship for a student enrolled in the College of Ceramics and is for the benefit of children of employees of Onondaga Pottery Company and Pass and Seymour, Inc., Syracuse, New York.

CURRICULA



CERAMIC ENGINEERING

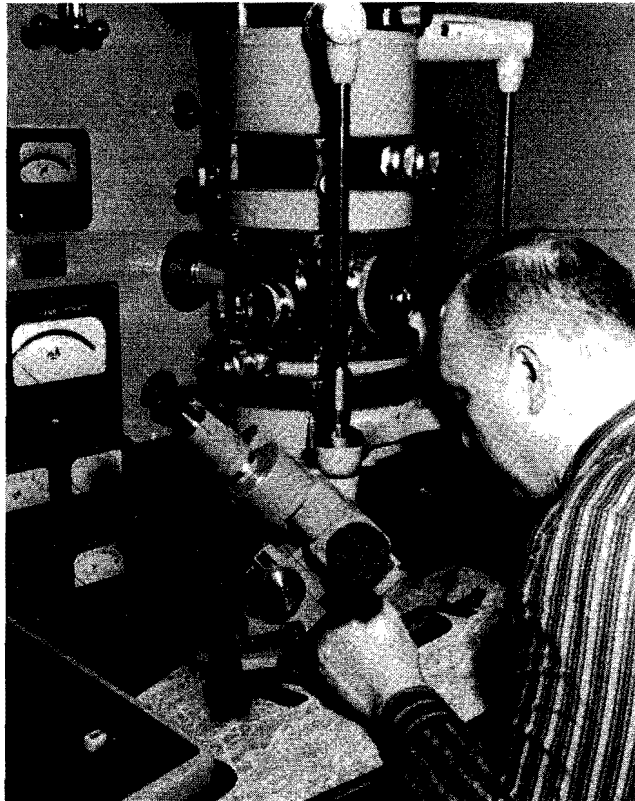
CERAMIC SCIENCE

GLASS SCIENCE

CERAMIC ART

The Faculty of the College of Ceramics is presently considering some changes in the art, engineering, and science curricula. If these are operative by September, 1968, students will be advised at the time of their registration for the first semester, 1968-69.

CERAMIC ENGINEERING



Engineering is a profession for which a student must prepare himself, not only in science and technology, but also in the humanities. An engineer must assume an obligation to protect the welfare of mankind, to attain enduring excellence through continued study, and to live according to ethical standards of conduct as in all recognized professions.

The engineer is neat, orderly, and accurate. He designs, creates, and exercises sound judgment. As he carries out his assignments, he is ever conscious of the economic factors involved and of the necessity for safeguarding life, health, and property. An engineer communicates with others with clarity and finesse, not only to get a job done, but also to promote harmony among those with whom he works.

Professor YOUNG, *Chairman*; Professor TUTTLE, Associate Professors KIRKENDALE, TINKLEPAUGH, WEST, Assistant Professors BURDICK, COFFIN, EARL, REED, Instructor FUNK

Programs leading to a degree in engineering prepare the student for his internship which will last at least four years and which will, in turn, prepare him for the professional examination he must pass before he can call himself an engineer.

The ceramic industry has need for engineers. It desires those who can apply their knowledge of the sciences and ceramic technology to its advancement. It needs engineers for production, research, development, teaching, and sales.

The undergraduate program leading to the Bachelor of Science degree in Ceramic Engineering prepares the student for a career as a professional engineer. After completing the course, he is eligible to take the Engineer-in-Training examination as well as the final examination required for the Professional Engineer's License.

CERAMIC ENGINEERING

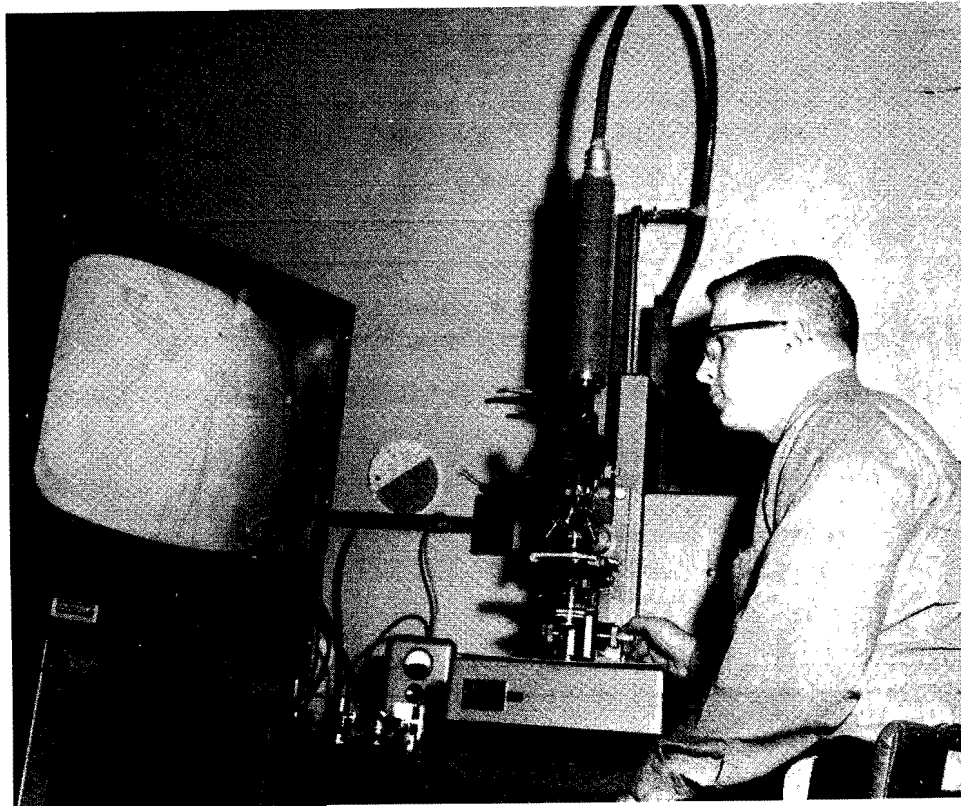
| First Year | | | |
|---|--------------|---|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Mathematics 217 (Analysis I) | 4 | Mathematics 218 (Analysis II) | 4 |
| Chemistry 105 (General Inorganic) . . . | 4 | Chemistry 106 (General Inorganic) . . . | 4 |
| English 101 (Composition) | 3 | English 102 (Composition) | 3 |
| E.G. 101 (Engineering Graphics) | 3 | Mineralogy 201 | 3 |
| C.E. 101 (Int. to Ceramics) | 1 | C.E. 102 (Int. to Ceramics) | 1 |
| C.E. 103 Laboratory | 1 | C.E. 104 Laboratory | 1 |
| C.E. 106 Computer | 2 | P.E. 102 or M.S. 112 | 1 |
| P.E. 101 or M.S. 111 | 1 | | |
| | 19 | | 17 |

| Second Year | | | |
|--|--------------|---|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Mathematics 219 (Analysis III) | 3 | Mathematics 220 (Analysis IV) | 3 |
| Chemistry 215 (Analytical) | 4 | CH 244 (Int. To Physical) | 3 |
| Physics 111 | 3 | PH 112 | 3 |
| CE 205 (Materials & Calculations) . . . | 3 | CE 206 (Operational techniques) | 3 |
| CE 203 Laboratory | 1 | CE 204 (Laboratory) | 1 |
| Civ. 101 (Civilization) | 3 | Civ. 102 (Civilization) | 3 |
| P.E. 203 or M.S. 221 | 1 | Eng. 335 (Technical Writing) | 2 |
| | 18 | P.E. 204 or M.S. 222 | 1 |
| | | | 19 |

| Third Year | | | |
|--|--------------|---|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| CH 345 (Physical Chem.) | 4 | Math 366 (Engineering Statistics) | 3 |
| PH 281 (Mechanics) | 4 | PH 282 (Elec. and Magnetism) | 4 |
| CE 327 (Crystal Chem.) | 3 | CE 332 (Thermal Engineering) | 3 |
| CE 305 Laboratory | 1 | CE 306 Laboratory | 2 |
| Eco. 211 (Economics) | 3 | Non-Tech. Elective | 3 |
| Non-Tech. Elective or M.S. 331 | 3 | Tech.-Elective or M.S. 332 | 3 |
| CE 371 (Seminar) | 0 | | |
| | 18 | | 18 |

| Fourth Year | | | |
|--|--------------|--|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| CE 431 (Operations Research) | 3 | CE 474 (Plant Design) | 5 |
| CE 419 (Strength-Structures) | 4 | Ceramic Elective | 3 |
| CE 403 (Physical Ceramics) | 4 | CE 404 (Props. of Ceramics) | 4 |
| CE 405 Laboratory | 2 | CE 406 Laboratory | 2 |
| CE 435 (Elec. Eng.) | 3 | Non-Tech. Elective or M.S. 442 | 3 |
| CE 471 (Seminar) | 0 | | |
| (M.S. 441) | (3) | | 17 |
| | 16 or 19 | | |
| Total required hrs. for graduation 142 | | | |

CERAMIC SCIENCE



A ceramic scientist is a person who has competency in chemistry, physics, mathematics, the earth sciences, and in ceramic science. He is a person who has an interest in research and development. Having an understanding of the art of ceramics and having an imaginative, curious mind, he applies his scientific knowledge to the development of new concepts, new processes, and new products.

The program leading to the degree of Bachelor of Science in Ceramic Science, while involving studies in depth in chemistry, physics, mathematics, and ceramic science, involves also studies in the humanities. It is particularly suited to those students who wish to prepare themselves for graduate study. It is a flexible program permitting a person, through electives, to take extra courses in one of the basic sciences, in mathematics, in the earth sciences, or in ceramic science.

The ceramic industry has need for persons who can bring to it a sound understanding of the basic sciences, a knowledge of its art, and a desire to contribute to its advancement. It needs persons equipped and willing to take on the tasks of innovating compositions, processes, and products for jet engines, for nuclear reactors, for electronics, for outer space vehicles as well as for everyday ceramics.

The industry recognizes that its future will depend greatly on the availability of competent ceramic scientists.

Professor BROWNELL, *Chairman*; Professors FRECHETTE, GRAY, Associate Professors CRAYTON, RASE, ROSSINGTON, WEINLAND, Assistant Professors CONDRATE, LAMPREY, MARTIN, MONROE

CERAMIC SCIENCE

| First Year | | | |
|---|--------------|---|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Mathematics 217 (Analysis I) | 4 | Mathematics 218 (Analysis II) | 4 |
| Chemistry 105 (General Inorganic) . . . | 4 | Chemistry 106 (General Inorganic) . . . | 4 |
| English 101 (Composition) | 3 | English 102 (Composition) | 3 |
| E.G. 101 (Engineering Graphics) | 3 | Mineralogy 201 | 3 |
| C.E. 101 (Int. to Ceramics) | 1 | C.E. 102 (Int. to Ceramics) | 1 |
| C.E. 103 Laboratory | 1 | C.E. 104 Laboratory | 1 |
| C.E. 106 Computer | 2 | P.E. 102 or M.S. 112 | 1 |
| P.E. 101 or M.S. 111 | 1 | | |
| | — | | 17 |
| | 19 | | |

| Second Year | | | |
|--|--------------|---|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Mathematics 219 (Analysis III) | 3 | Mathematics 220 (Analysis IV) | 3 |
| Chemistry 215 (Analytical) | 4 | CH 244 (Int. To Physical) | 3 |
| Physics 111 | 3 | PH 112 | 3 |
| CE 205 (Materials & Calculations) . . . | 3 | CE 206 (Operational techniques) | 3 |
| CE 203 Laboratory | 1 | CE 204 (Laboratory) | 1 |
| Civ. 101 (Civilization) | 3 | Civ. 102 (Civilization) | 3 |
| P.E. 203 or M.S. 221 | 1 | Eng. 335 (Technical Writing) | 2 |
| | — | P.E. 204 or M.S. 222 | 1 |
| | 18 | | — |
| | | | 19 |

| Third Year | | | |
|---------------------------------------|--------------|---------------------------------------|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Chemistry 345 (Phys. Chem.) | 4 | Mathematics 366 (Eng. Statistics) . . | 3 |
| Chemistry 437 (Physicochem. Equil.) | 2 | Chemistry 348 (Phys. Chem.) | 4 |
| Physics 281 (Inter. Gen. Phys.) . . . | 4 | Physics 282 (Inter. Gen. Phys.) . . . | 4 |
| Ceramics 328 (Crystal Chem.) | 3 | Petrography 302 | 3 |
| Humanity Elect. or M.S. 331 | 2-4 | Humanity Elect. or M.S. 332 | 3-4 |
| Technical Elective | 3 | | — |
| | 18-20 | | 17-18 |

| Fourth Year | | | |
|---------------------------------------|--------------|--------------------------------------|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Physics Elective | 3 | Ceramics 404 (Properties) | 4 |
| Ceramics 403 (Unit Processes) | 4 | Ceramics 462 (Thesis) | 2 |
| Ceramics 461 (Thesis) | 2 | Tech. Elective or M.S. 442 | 5-6 |
| Tech. Elective or M.S. 441 | 2-3 | Economics 212 (Prin. and Probs.) . . | 3 |
| Economics 211 (Prin. and Probs.) . . | 3 | Humanity Elective | 2-4 |
| Humanity Elective | 3-4 | | — |
| | 17-19 | | 16-19 |

Total Required Hours for Graduation142



GLASS SCIENCE



The curriculum in Glass Science prepares graduates for usefulness in the glass, electronic, and enamel industries. In its flexibility, it provides the opportunity for the student to concentrate on the technical aspects of glass, on the engineering aspects of glass manufacture, or to direct his program toward future graduate study.

The student in Glass Science takes basic courses in mathematics, physical chemistry, electricity and petrography. If he wishes to become a "glass engineer" his program will include glass melting, mechanics, strength of materials and other subjects which assist him in preparation for professional engineering. If the student is interested in the more technical aspects of "glass science" he may elect courses in advanced chemistry, spectroscopy, x-rays, advanced petrography, statistics, organic chemistry and other technical subjects. A student preparing for executive responsibilities in the glass industries may elect technical courses in business and economics. Preparation for graduate study should include advanced science and mathematics as well as a foreign language.

At the completion of three semesters after midterm examinations during the sophomore year, the student electing to study glass science will, with the help of his advisor, outline a program for the remaining four semesters of his college career. This program is subject to review by the Chairman of the Glass Science Department and the Dean of the College and must be approved by them before it can be accepted. Subsequent revision of an approved program will be permitted only if an adequate aim for such revision can be demonstrated, and, in such instances, there may be an increase in the number of credit hours required for graduation.

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.

In general, all courses offered by the Glass Science Department, by the Ceramic Engineering Department, by the Ceramic Science Department, and by some of the Departments of the Liberal Arts College beyond those required for the Glass Science program are suitable for technical electives in the glass program. However, the courses elected must form a coherent whole. To ensure this, they must be reviewed and approved by the student's advisor and by the department chairman before registration. Certain courses in Economics and Business constitute technical electives and may be selected as such. Others may be counted as non-technical electives.

Professor GREENE, *Chairman*; Professor SIMPSON

GLASS SCIENCE

| First Year | | | |
|---|---------------------|---|---------------------|
| <i>First Semester</i> | <i>credit hours</i> | <i>Second Semester</i> | <i>credit hours</i> |
| Mathematics 217 (Analysis I) | 4 | Mathematics 218 (Analysis II) | 4 |
| Chemistry 105 (General Inorganic) . . . | 4 | Chemistry 106 (General Inorganic) . . . | 4 |
| English 101 (Composition) | 3 | English 102 (Composition) | 3 |
| E.G. 101 (Engineering Graphics) | 3 | Mineralogy 201 | 3 |
| C.E. 101 (Int. to Ceramics) | 1 | C.E. 102 (Int. to Ceramics) | 1 |
| C.E. 103 Laboratory | 1 | C.E. 104 Laboratory | 1 |
| C.E. 106 Computer | 2 | P.E. 102 or M.S. 112 | 1 |
| P.E. 101 or M.S. 111 | 1 | | |
| | — | | 17 |
| | 19 | | |

| Second Year | | | |
|---|---------------------|---|---------------------|
| <i>First Semester</i> | <i>credit hours</i> | <i>Second Semester</i> | <i>credit hours</i> |
| Mathematics 219 (Analysis III) | 3 | Mathematics 220 (Analysis IV) | 3 |
| Chemistry 215 (Analytical) | 4 | CH 244 (Int. To Physical) | 3 |
| Physics 111 | 3 | PH 112 | 3 |
| CE 205 (Materials & Calculations) | 3 | CE 206 (Operational techniques) | 3 |
| CE 203 Laboratory | 1 | CE 204 (Laboratory) | 1 |
| Civ. 101 (Civilization) | 3 | Civ. 102 (Civilization) | 3 |
| P.E. 203 or M.S. 221 | 1 | Eng. 335 (Technical Writing) | 2 |
| | — | P.E. 204 or M.S. 222 | 1 |
| | 18 | | — |
| | | | 19 |

| Third Year | | | |
|--|---------------------|------------------------------------|---------------------|
| <i>First Semester</i> | <i>credit hours</i> | <i>Second Semester</i> | <i>credit hours</i> |
| Physics 281 | 4 | Physics 282 | 4 |
| Electives | 4 | Electives | 4 |
| Chemistry 345 (Physical Chem.) | 4 | Petrography 302 | 3 |
| Glass 301 (Manufacturing) | 3 | Glass 302 (Properties I) | 3 |
| Glass 351 (Laboratory) | 2 | Glass 352 (Laboratory) | 2 |
| Glass 471 (Seminar) | 1 | Glass 472 (Seminar) | 1 |
| | — | | — |
| | 18 | | 17 |

| Fourth Year | | | |
|--|---------------------|---------------------------------------|---------------------|
| <i>First Semester</i> | <i>credit hours</i> | <i>Second Semester</i> | <i>credit hours</i> |
| Electives | 5 | Electives | 8 |
| CE 331 (Thermal Engineering) | 3 | CE 334 (Electrical Science) | 3 |
| Economics 211 (Prin. and Probs.) | 3 | *Glass 404 (Melting) | 3 |
| Glass 403 (Properties II) | 3 | Glass 462 (Thesis) | 2 |
| Glass 461 (Thesis) | 2 | Glass 472 (Seminar) | 1 |
| Glass 471 (Seminar) | 1 | | — |
| | — | | 17 |
| | 17 | | |

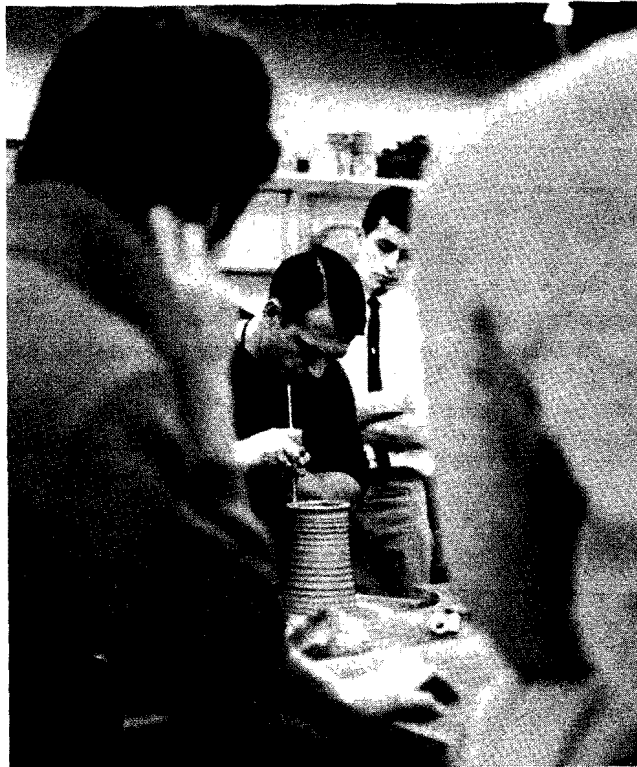
Total required hrs. for graduation 142

*With permission, Glass 406 taken for 3 credit hours, may be substituted for Glass 404.

Students preparing for graduate school are strongly advised to elect German or Russian.

At least 12 hours of technical elective courses must be selected with approval of the advisor and the Chairman of the Glass Science Department. At least 9 hours of non-technical courses approved by the student's advisor and the Chairman of the Glass Department must also be selected, making a total of 142 hours required for graduation with the Bachelor of Science Degree in Glass Science.

CERAMIC ART



The Bachelor of Fine Arts (B.F.A.) program offers four years of study in art, design, science and the humanities. The program has two main objectives: to build a general education with a specialization in art; to prepare the talented student for graduate work in the various art and design programs offered by graduate schools throughout the country and abroad.

A two-year foundation program is required. This includes lecture studies in history, literature, mathematics, sciences and the history of art—and studio studies in painting, sculpture, visual design, dimensional design, and pottery.

During the last two years 32 credit hours may be elected in: a range of liberal arts subjects to build a creative education of a general nature—or in studio studies as major preparation for graduate work in painting, sculpture, graphics, design, ceramics, and art history. A minimum of 28 upper division credit hours in any one of these areas must be presented for the B.F.A. degree. A total of 138 credit hours is required for graduation.

Owing to space limitations admission to the program is restrictive, with preference being given to applicants who are in the upper third of their high school graduating class and who show evidence of exceptional ability in art and design.

Those qualified for advanced study in Ceramic Art may be offered a two-year residence program leading to the Master of Fine Arts degree (M.F.A.). This program provides for a concentrated development of ceramics in its historical, technical, and aesthetic dimensions. Its objective is to help the talented prepare for a way of life in the ceramic arts, a professional career in design, or for the college level responsibilities of artist-teacher in the ceramic disciplines.

Professor RANDALL, *Chairman*; Associate Professors CUSHING, PARRY, RHODES, TURNER, WOOD, Assistant Professors CARR, HIGGINS, KAVESH, MAHAN, Instructor GUY

CERAMIC ART

| First Year | | | |
|---|--------------|--------------------------------------|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Design 131 (Visual Design I) | 3 | Design 112 (Drawing) | 4 |
| Design 141 (Dimensional Design I) | 4 | Design 122 (Sculpture I) | 3 |
| Design 161 (Intro. to Art) | 2 | Design 162 (Intro. to Art) | 2 |
| Design 171 (Pottery) | 2 | Design 172 (Pottery) | 2 |
| Civilization 101 | 3 | Civilization 102 | 3 |
| English 101 (Composition) | 3 | English 102 (Composition) | 3 |
| P.E. 101 or M.S. 111 | 1 | P.E. 102 or M.S. 112 | 1 |
| | 18 | | 18 |

| Second Year | | | |
|-------------------------------------|--------------|---|--------------|
| First Semester | credit hours | Second Semester | credit hours |
| Design 211 (Painting I) | 3 | Design 232 (Visual Design II) | 3 |
| Design 221 (Sculpture II) | 3 | Design 242 (Dimensional Des.) | 3 |
| Design 261 (Modern Art I) | 2 | Design 262 (Modern Art II) | 2 |
| Design 271 (Pottery) | 2 | Design 272 (Pottery) | 2 |
| Design 273 (Cer. Mat'ls.) | 3 | Design 274 (Glaze Calculations) | 3 |
| Geology* | 3 | Mathematics* | 3 |
| P.E. 203 or M.S. 221 | 1 | P.E. 204 or M.S. 222 | 1 |
| | 17 | | 17 |

*For Geology and Mathematics, see Advisor.

| Third Year | | | |
|---|--------------|---|--------------|
| (17 hours each semester) | | | |
| First Semester | credit hours | Second Semester | credit hours |
| Design 311 (Painting II) | 4 or 6 | Design 312 (Painting II) | 4 or 6 |
| Design 321 (Sculpture III) | 4 or 6 | Design 322 (Sculpture III) | 4 or 6 |
| Design 331 (Graphics I) | 4 or 6 | Design 332 (Graphics I) | 4 or 6 |
| Design 333 (Photography I) | 2 | Design 334 (Photography) | 2 |
| Design 341 (Design III) | 4 or 6 | Design 342 (Design III) | 4 or 6 |
| Design 353 (Adv. Tech. Draw.) | 2 | Design 354 (Adv. Tech. Draw.) | 2 |
| **Art History | 3 | **Art History | 3 |
| Design 371 (Pottery III) | 4 or 6 | Design 372 (Pottery III) | 4 or 6 |
| Design 377 (Glass Forming) | 4 or 6 | Design 378 (Glass Forming) | 4 or 6 |
| Elective in Liberal Arts | 4 or 6 | Elective in Liberal Arts | 4 or 6 |

| Fourth Year | | | |
|---------------------------------------|--------------|---------------------------------------|--------------|
| (17 hours each semester) | | | |
| First Semester | credit hours | Second Semester | credit hours |
| Design 411 (Painting III) | 4 or 10 | Design 412 (Painting III) | 4 or 10 |
| Design 421 (Sculpture IV) | 4 or 10 | Design 422 (Sculpture IV) | 4 or 10 |
| Design 431 (Graphics II) | 4 or 10 | Design 432 (Graphics II) | 4 or 10 |
| Design 433 (Photography II) | 2 | Design 434 (Photography II) | 2 |
| Design 441 (Design IV) | 4 or 10 | Design 442 (Design IV) | 4 or 10 |
| Design 471 (Pottery IV) | 4 or 10 | Design 472 (Pottery IV) | 4 or 10 |
| Design 477 (Glass Forming) | 4 or 10 | Design 478 (Glass Forming) | 4 or 10 |
| *English 223 | 3 | *English 224 | 3 |
| Elective in Liberal Arts | 4 or 10 | Elective in Liberal Arts | 4 or 10 |

*Required for graduation.

**Six elective hours required in the area. (DE 361 thru DE 370)

ALPHABETICAL LISTING OF COURSES*

BIOLOGY

B10 101-102. GENERAL BIOLOGY

4 hrs.

A survey of the structural features, development, inheritance, evolution and interrelationships of plants and animals. Emphasis will be given to the underlying principles that have emerged during the development of biology as a science. Laboratory work will stress the importance of observation and experiment in the formulation of these unifying generalizations. Two lectures, two laboratory periods, one discussion section.

CERAMIC ENGINEERING

CE 101. A STUDY OF THE CERAMIC INDUSTRIES

1 hr.

A survey of the ceramic industry intended to develop a familiarity with products, operations, processes and terminology as a background for subsequent courses. One lecture per week.

CE 102. A STUDY OF THE CERAMIC INDUSTRIES

1 hr.

One lecture per week.

CE 103. CERAMIC LABORATORY

1 hr.

A laboratory designed to give the student a familiarity with fabrication techniques. Nine experiments with reports required. One laboratory per week.

CE 104. CERAMIC LABORATORY

1 hr.

A continuation of CE 103 laboratory with more involved and more quantitative experiments. Five experiments with reports required.

CE 106. COMPUTER TECHNIQUES

2 hrs.

An introduction to computer language (Fortran) and program writing. Two lectures per week.

CE 203. CERAMIC LABORATORY

1 hr.

Laboratory experiments of a quantitative nature designed to demonstrate certain fundamental principles involved in the behavior of ceramic materials and products. Seven experiments with reports required.

CE 205. MATERIALS

3 hrs.

A comprehensive survey of the raw materials used to fabricate ceramic bodies is made. The elementary principles of crystal chemistry are applied to the description of raw materials. Calculations of batches and bodies for many types of ceramic products are made. Three lectures. Offered first semester.

CE 206. OPERATIONAL TECHNIQUES

3 hrs.

Introduction to techniques employed in ceramic and glass operations including materials handling, forming, drying, firing and economic considerations. Three lectures per week.

CE 305. CERAMIC LABORATORY

1 hr.

Quantitative experiments designed to illustrate various techniques involved in clay testing and the relationship to behavior in use. Six experiments with required reports.

CE 306. CERAMIC LABORATORY

1 hr.

Precise quantitative experiments dealing with properties of ceramic materials. Five experiments with required reports.

CE 327. CRYSTAL CHEMISTRY

3 hrs.

Introduction to atomic structure, coordination theory, types of bonding and their relationship to properties of silicates and glasses. Three lectures per week.

CE 332. THERMAL ENGINEERING

3 hrs.

Principles and quantitative solution of problems encountered in ceramics involving temperature measurement, instrumentation, fuels, material and energy balance and heat transfer mechanisms. Three lectures per week. Prerequisites: PH 111-112 and Math 219-220.

CE 352. ENGINEERING MANAGEMENT (Humanities Elective)

3 hrs.

Common problems encountered by chemical and ceramic graduates in industry are discussed. The principles of industrial research, new product development, selection of research projects, and market analyses are covered. Procedures related to patents, technical information sources, corporate acquisition programs, foreign operations, cost planning, and sales are described. Three lectures. Offered second semester.

*CE 403. PHYSICAL CERAMICS

4 hrs.

A study of the physical-chemical principles of those high temperature mechanisms that influence the firing of ceramics. Topics include structural imperfections, surface effects, diffusion, nucleation, crystal growth, sintering, vitrification, non-equilibrium reactions and nature of representative microstructures. Four lectures per week.

*CE 404. PROPERTIES OF CERAMICS

4 hrs.

The study of the properties of the ceramic structures that are developed in CE 403. Included are thermal, optical, mechanical, electrical and magnetic properties. Four lectures per week.

*General information concerning courses and the course numbering system is given on p. 84.

*May be taken for graduate credit.

- CE 405. CERAMIC LABORATORY 2 hrs.
An internship activity in which the student undertakes a realistic and complete engineering project. These projects are unsolved problems from current technology including conception, design, testing, development, construction and evaluation. Projects worked on in small groups with faculty advisor. Written report due May 1.
- CE 406. CERAMIC LABORATORY 2 hrs.
Continuation of CE 405.
- *CE 408. STRUCTURAL CLAY PRODUCTS (Ceramic Elective) 2 hrs.
Specialization in the technology and the engineering aspects of the structural clay products industry. Two lectures per week.
- *CE 409. WHITEWARES (Ceramic Elective) 3 hrs.
A study of bodies, glazes and colors. A specialized course dealing with whiteware production, control and properties. Three lectures per week.
- *CE 414. REFRACTORIES (Ceramic Elective) 3 hrs.
A study of the fundamental technology of all refractories and the engineering aspects of their production and use. Three lectures per week. Prerequisite CE 205.
- *CE 415. LIME, GYPSUM, AND CEMENT (Ceramic Elective) 3 hrs.
The properties, manufacture, testing, and uses of cementing materials with particular regard to basic principles. Three lectures. Offered first semester. Prerequisite CE 205.
- *CE 418. ENAMELS (Ceramic Elective) 2 hrs.
The technology of the application of vitreous enamels to metals. Two lectures.
- CE 419. STRENGTH OF MATERIALS 4 hrs.
A treatment of the mechanical properties of materials under various types of static stresses coordinated with the analysis of stresses and the design of simple machine and structural members. Four lectures per week. Prerequisite PH 281.
- *CE 423 and 424. ADVANCED CERAMIC TECHNOLOGY each semester 2 hrs.
The study of solid-state reactions, ion exchange, unequilibrium crystallization, etc., and their ceramic implications. Two lectures.
- CE 431. OPERATIONS RESEARCH 3 hrs.
A consideration of the basic principles underlying linear programming, Queing theory, perturbation techniques, transportation, assignment, allocation, minimization, mesinization and decision theory. Three lectures per week. Prerequisite Math 220.
- CE 435. ELECTRICAL ENGINEERING 3 hrs.
Quantitative treatment of d-c, a-c circuits, vacuum and semi-conductor devices, power supplies and filters, amplifiers, oscillators and power control. Two lectures, one laboratory per week. Prerequisites PH 282 and Math 219-220.

*May be taken for graduate credit.

- *CE 437. PHYSICOCHEMICAL EQUILIBRIUM 2 hrs.
Advanced study and interpretation of phase equilibria in binary, ternary, and quaternary systems, especially those involving oxides and silicates. Emphasis is given to application of equilibrium and nonequilibrium reactions to ceramic processes.
- CE 461-462. THESIS 2 hrs.
- *CE 464. HIGH TEMPERATURE, HIGH STRESS MATERIALS 1 hr.
Raw materials, fabrication, firing, properties of cermets, intermetallas and oxide ceramics for use in high temperature-high stress applications. One lecture per week.
- CE 474. PLANT DESIGN 5 hrs.
The engineering features of plant layout and design are considered. These include overall design, preparation of plant layout, data collection, development and layout evaluation, materials handling, services, storage, employee relationship and other common problems. Three lectures, one laboratory.
- CE 517 and 518. GRADUATE SEMINAR No credit
Weekly lectures and discussions with visiting lecturers, faculty members and graduate students. Required of all graduate students throughout their residence.
- CE 544. GRADUATE CERAMICS
A staff presentation of advanced topics in ceramic technology. One lecture and one seminar per week.
- GT 510. GRADUATE THESIS Hours to be arranged
Suitable projects for investigation are reviewed by the student in consultation with advisors and a subject of special interest is selected. The thesis subject must formally be approved by the student's committee. The thesis must be suitable for publication, show original work, presented and defended orally before the faculty.

CHEMISTRY

- CH 105-106. GENERAL INORGANIC CHEMISTRY each semester 4 hrs.
A systematic study of fundamental principles, theories, and calculations. Preferably for students who have had a year of high school chemistry. Laboratory work in the second semester includes an introductory study of inorganic qualitative analysis. Two lectures, one recitation, and two laboratory periods. Breakage deposit \$5.00.
- CH 215. ANALYTICAL CHEMISTRY 4 hrs.
Introduction to the principles of inorganic chemical analysis. Mathematics of chemical stoichiometry, equilibrium constants, solubility product, and pH are stressed. Laboratory consists of major group separations, the semi-micro preparation of inorganic compounds, the study of their behaviors, and estimation of cations and anions. Two lectures, two laboratory periods. Prerequisite CH 105-106.

*May be taken for graduate credit.

CH 216. QUANTITATIVE ANALYSIS

4 hrs.

Volumetric and gravimetric analysis. Prerequisite: For students in College of Ceramics, Chemistry 105–106. Required of chemistry majors and recommended for pre-medical and pre-dental students. Two lectures, and two laboratory periods. Breakage deposit \$15.00. This course is offered in the College of Ceramics.

CH 244. INTRODUCTION TO PHYSICAL CHEMISTRY

3 hrs.

Thermochemistry, thermodynamics, free energy and entropy, homogeneous equilibrium, gases, thermochemistry, first and second laws of thermodynamics, chemical bonding, and nuclear chemistry are covered. Three lectures. Prerequisite CH 215 and MA 218.

CH 335. FUNDAMENTALS OF ORGANIC CHEMISTRY

3 hrs.

A summary course, emphasizing as much as possible, applications of carbon compounds in ceramics. Elective, for undergraduate credit. Prerequisite CH 105–106. Two lectures.

CH 337. DESCRIPTIVE INORGANIC CHEMISTRY

3 hrs.

Course deals with the descriptive chemistry of the families of elements and classes of compounds of greatest ceramic interest. The methods of evaluation of the various chemical properties and techniques of prediction are discussed. The chemical consequences of the three different conditions, aqueous solution, melts, and solid-solid interaction are presented. Three lectures. Offered first semester.

CH 345. PHYSICAL CHEMISTRY

4 hrs.

Liquids and solutions, equilibrium theory, kinetics, electrochemistry, surface chemistry, and introduction to phase diagrams are covered. Three lectures, one laboratory. Prerequisite, CH 244. Breakage deposit \$15.00.

CH 348. ADVANCED PHYSICAL CHEMISTRY

4 hrs.

An elaboration of topics covered in CH 244 and CH 345 at a more advanced level is made. Some independent reading is encouraged. Three lectures, one laboratory. Prerequisite, CH 345. Breakage deposit \$15.00.

CH 477. ELEMENTARY SPECTROSCOPY

3 hrs.

Basic principles of spectroscopic instruments, including sources, dispersing elements and detectors in relation to the measurement of radiation wavelength and intensity. The origin of atomic and molecular spectra, spectral series and notation. Qualitative and quantitative analysis by emission spectroscopy. Techniques and applications of ultraviolet, visible and infrared absorption spectrophotometry. Two lectures and one laboratory period per week, first semester.

CH 502. ADVANCED PHYSICAL CHEMISTRY

3 hrs.

A study of equations of state, chemical equilibria—a) homogeneous, b) heterogeneous, diffusion phenomena, strong electrolytes, theory of dislocations, theory of nucleation phenomena, theory of crystal growth. Offered second semester. Prerequisite CH 503.

CH 503. GENERAL PHYSICAL CHEMISTRY

3 hrs.

Atomic structure, chemical bonding and related properties, kinetic theory, thermodynamics, electrochemistry, spectroscopy and liquid state. Offered first semester. Prerequisite CH 345, MA 372, MA 467.

CH 507. WAVE MECHANICS

3 hrs.

An introduction to wave mechanics and the required mathematics. Derivation of the Schrodinger wave equation for the H atom, H_2^+ ion, H_2 molecule, and He atom. Comparison of valence-bond and molecule orbital treatments. Molecular diagrams. Offered first semester.

CH 512. CHEMICAL KINETICS

3 hrs.

A study of the rates and mechanisms of chemical reactions. Kinetic theory is reviewed and extended to collision and transition-state theories. The statistical treatment of reaction rates is covered. Special attention is given to surface and solid-state reactions, catalysis, viscosity, and diffusion processes. Offered second semester. Prerequisite CH 503.

CH 527. CRYSTAL CHEMISTRY

3 hrs.

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 silicates, both crystalline and glassy, than on other compounds or on metals. Three lectures. Offered first semester.

CH 529. INORGANIC CHEMISTRY

3 hrs.

Inorganic compounds, applications of thermodynamics to inorganic chemistry in high temperature systems; acids, bases and non-aqueous solvents; coordination chemistry. Prerequisite CH 345.

CH 535 and 536. SOLID STATE CHEMICAL PHYSICS

each semester 3 hrs.

A study of defect structure of solids, band theory of solids and variants, surface electronic states, semiconductors; preparation and properties, photoconductors; preparation and properties, luminescent materials; preparation and properties, magnetic properties of materials, soft magnetic materials; preparation and properties, diffusion in ionic materials.

CH 576. STATISTICAL THERMODYNAMICS

3 hrs.

Classical and quantum statistical thermodynamics. Applications to physical chemical process. Offered second semester. Prerequisite CH 503.

CH 581. GENERAL SURFACE CHEMISTRY

3 hrs.

A study of adsorption phenomena with particular reference to gas-solid, gas-liquid, and liquid-solid interactions.

CH 584. ADVANCED INORGANIC CHEMISTRY

3 hrs.

Advanced quantum and statistical mechanics, bond theory and molecular structure, many electron problems, free electron theory, and band theory. Offered second semester.

CH 586. ORGANIC AND INORGANIC POLYMERS

3 hrs.

Study of the structure and properties of polymers, including stereospecific polymers. Kinetics of polymer formation. Thermodynamics of polymers. Methods of determining molecular weights. Silicones and new materials formed from inorganic polymers. Ceramic fibres and filaments. Industrial applications of polymers. Offered second semester.

CIVILIZATION

CIV 101 and 102. CIVILIZATION

each semester 3 hrs.
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. The course is conducted by a permanent teaching panel with occasional lectures given by representatives from the various departments of the University.

ART

DE 112. DRAWING

4 hrs.
Free-hand drawing and design from still life, landscape, the figure and memory; all media used. Introductory work in color. Eight clock hours per week.

DE 122. SCULPTURE I

3 hrs.
Exercises and creative experiments aimed at uncovering the structural and plastic limits and potentials of clay. Eight clock hours per week.

DE 131. VISUAL DESIGN I

3 hrs.
A study of the basic vocabulary of two-dimensional design: point, line, texture, value and color. Application of this vocabulary in drawing and elementary design problems leading to an understanding of two-dimensional form and space. Eight clock hours per week.

DE 141. DIMENSIONAL DESIGN I

4 hrs.
Exercises in three-dimensional design using a variety of materials. The student designs and constructs simple hand tools and utensils. Construction drawing. Eight clock hours per week.

DE 161-162. INTRODUCTION TO ART

each semester 2 hrs.
A survey of the changing forms of architecture, painting, and sculpture in the historical context of cultural ideals, social environment and patronage to the beginning of the Modern Period, c. 1789. This course is a requirement for the Bachelor of Fine Arts degree and for Liberal Arts majors in fine arts. Three lectures.

DE 171-172. INTRODUCTION TO POTTERY

each semester 2 hrs.
Work with the potters wheel as a foundation for the development of skills in forming.

DE 211. PAINTING I

3 hrs.
Plastic drawing and spatial organization, from still life, and landscape. All media used. Eight clock hours per week.

DE 221. SCULPTURE II

3 hrs.
Studies in recognition of the sculptural idea and the sources of visual energy in the sculptural statement. Modelled and constructed work in clay. Eight clock hours per week.

DE 232. VISUAL DESIGN II

3 hrs.
Continuation of 131. Introduction to typography, photomontage, and related exercises in drawing. The planning and organization of exhibitions. Eight clock hours per week.

DE 242. DIMENSIONAL DESIGN II

3 hrs.
The development of special knowledge and skills necessary to the solution of design problems. The study of structure. Design of small objects in wood, metal, glass, and other materials. The preparation of sections, profiles and models. Eight clock hours per week.

DE 261. MODERN ART I

2 hrs.
Art from the French Revolution to the First World War. Required for graduation. (Elective for Liberal Arts students.) Two lectures.

DE 262. MODERN ART II

2 hrs.
Art from World War I to the present. Required for graduation. Prerequisite De 261 or permission of instructor. (Elective for Liberal Arts students.) Two lectures.

DE 271-272. POTTERY—FORMING

each semester 2 hrs.
Advanced techniques. Thrown and pressed ware.

DE 273. CERAMIC MATERIALS

3 hrs.
A general course in ceramic raw materials. The origin and properties of clays and other materials used in pottery bodies. Laboratory exercises involving the use and properties of materials and development of pottery body compositions. Two lecture periods and one laboratory period.

DE 274. GLAZE CALCULATIONS

3 hrs.
A study of the composition properties and uses of materials used in glazes. Calculation of glaze formulas and batches. Laboratory exercises in the development of color and texture. Two lecture periods and one laboratory period.

DE 311-312. PAINTING II

each semester 4 to 6 hrs.
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 used in this course.

DE 321-322. SCULPTURE III

each semester 4 to 6 hrs.
Self-determined sculpture problems correlated with Course 371 (Clay Forming). Area of concentration includes architectural ceramic applications and functions.

DE 331-332. GRAPHICS I

each semester 4 to 6 hrs.
General survey of graphic methods. Introduction to elementary printing methods: stencil, type, monoprint. Investigation of the woodcut as a creative medium.

DE 333-334. PHOTOGRAPHY I

each semester 2 hrs.
An introduction to the basic elements of photography. Fundamental camera and dark-room techniques will be studied. Emphasis is on photography as an interpretative medium. Enrollment is limited to ten students.

- DE 341-342. DIMENSIONAL DESIGN III each semester 4 to 6 hrs.
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.
- DE 353-354. ADVANCED TECHNICAL DRAWING each semester 2 hrs.
A course in advanced perspective and architectural drawing tailored to the needs of the individual student. Additional credit by arrangement with instructor.
- DE 361-362. CLASSICAL ART each semester 3 hrs.
A detailed study of certain aspects of Greek or Roman Art and Architecture. Three lectures. (To be offered 1968-1969).
- DE 363-364. MEDIEVAL ART each semester 3 hrs.
From the rise of Christianity to the fall of Constantinople, embracing certain aspects of the Art and Architecture of the Early Christian and Byzantine Empire, or Romanesque and Gothic periods in Western Art. Three lectures.
- DE 365-366. RENAISSANCE ART each semester 3 hrs.
The Art and Architecture of Italy from c. 1400 to 1600 or Northern European Painting and Sculpture of c. 1400 to 1600. Three lectures.
- DE 367-368. ORIENTAL ART each semester 3 hrs.
The Art and Architecture of China, Japan and the Indian East, or *the Art of the Ancient Near East: Islamic Art and Architecture*. Three lectures. (To be offered 1968-1969).
- DE 369-370. HISTORY OF POTTERY each semester 3 hrs.
A survey of pottery styles of the great cultures including the history of body and glaze materials, forming, kilns and decorative styles. Problems of evaluation will also be considered. Three lectures.
- DE 371-372. POTTERY III—FORMING 4 to 6 hrs.
A general course in pottery design and production. Creative use of clays and glazes; ceramic colors and textures. Molds and models. Firing practice.
- DE 377-378. GLASS FORMING each semester 4 to 6 hrs.
Basic studies in glass forming—offhand and mold processes.
- DE 411-412. PAINTING III each semester 4 to 10 hrs.
An advanced course in painting and drawing—all media used.
- DE 421-422. SCULPTURE IV each semester 4 to 10 hrs.
Advanced sculpture problems in the organization of ceramic elements and welded metal elements. Enrollment in this course is limited to six students.
- DE 431-432. GRAPHICS II each semester 4 to 10 hrs.
Advanced application of graphic methods learned in 331. Problems in visual design (book illustration, exhibition, the series) will be arranged individually with the student.

- DE 433-434. PHOTOGRAPHY II each semester 2 hrs.
Advanced work in photography. Four clock hours per week.
- DE 441-442. DIMENSIONAL DESIGN IV each semester 4 to 10 hrs.
An advanced course in drawing and three dimensional design problems, planned individually with each student.
- DE 450. INDEPENDENT STUDY
A course of independent study under direction of the art staff. Hours and credit to be arranged with the Chairman of the department.
- DE 460. INDEPENDENT STUDY IN HISTORY OF ART
For majors in art history. Hours arranged with instructor.
- DE 461-462. HISTORY OF AMERICAN ART AND ARCHITECTURE each semester 3 hrs.
Discussion and lectures in American studies of role and development of American art, architecture and taste. Three lectures.
- DE 463-464. BAROQUE ART AND ARCHITECTURE each semester 3 hrs.
Discussion and lectures in Italian art, architecture and art theory, or the Baroque Period in Northern European art, architecture and art theory. Three lectures.
- DE 465-466. HISTORY OF ARCHITECTURE each semester 3 hrs.
Aspects of history of architecture: European, American or Oriental. Three lectures.
- DE 467-468. HISTORY OF GRAPHIC ART each semester 3 hrs.
A detailed survey of certain aspects in the history of engraving wood-cut and typography into the contemporary graphic world, or history of draftsmanship. Three lectures.
- DE 469. AFRICAN AND OCEANIC ART each semester 3 hrs.
Study of art and artifacts of Primitive cultures. Three lectures.
- DE 471-472. POTTERY each semester 4 to 10 hrs.
Problems in the design of pottery, tableware, and glass products. Individual problems including various methods of forming and types of market requirements; survey of history of ceramics.
- DE 477-478. ADVANCED STUDIES IN GLASS FORMING each semester 4 to 10 hrs.
- DE 480. ART METHODS AND MATERIALS 4 hrs.
A laboratory and study course preparing those students interested in teacher certification for the following semester's practice teaching.
- GRADUATE COURSES (GENERAL)
Hours and credits for graduate courses are arranged individually with each student. Graduate students may elect any 400 level art course.
- DE 550. INDEPENDENT STUDY
A course in independent study under the direction of the art staff. Hours and credit to be arranged with the Chairman of the department.

DE 561-562. THEORIES OF ART

each semester 2 hrs.
A study of the principal theories of the nature and function of Art from the Greeks to the Renaissance and from the Baroque to the present. A critical examination will be made of significant texts and documents. Open to undergraduates with permission of the instructor. Two lectures.

DE 571-572. ADVANCED POTTERY

each semester 8 hrs.
Advanced problems in ceramic art.

DE 575. ADVANCED CERAMIC MATERIALS AND CALCULATIONS

2 hrs.
A study of scientific theories of the structure of matter and ceramic processes from clay-water systems to glasses and glazes. Two lecture periods per week. Open to undergraduates with permission of the instructor.

DE 576. KILN DESIGN

2 hrs.
A basic study of fuels, refractories, combustion, and firing techniques for basic kiln types. The cost estimates and designs for one or more kilns will be evolved through orthographic projection, detailed working drawings, and materials specification sheets. Open to undergraduates with permission of the instructor.

DE 577-578. RAW MATERIALS TESTING & RESEARCH

each semester 2 hrs.
Correlated with DE 575.

DE 661-662. GRADUATE SEMINAR

each semester 2 hrs.

DE 664. GRADUATE THESIS

A summing up on an intellectual and philosophical level of the candidate's thoughts about his work. Correlated to courses DE 673 and 674 and DE 661 and 662.

DE 671-672. ADVANCED POTTERY

each semester 2 hrs.
Advanced problems in ceramic art.

DE 673-674. GRADUATE PROJECT

In this course each graduate student selects and carries to completion an advanced problem or project in ceramics or art. The subject of the project is selected jointly with the faculty and is based upon the student's interests and aptitudes as evidenced by his previous performance in all courses. When completed and submitted in an approved form, the graduate project may be considered in support of the student's application for the Master of Fine Arts degree.

DE 673A. DESIGN—PROFESSIONAL PRACTICE. (Elective)

This is a supervised off-campus work period in the design laboratory of an industrial plant. Hours to be arranged.

DE 674S. GRADUATE PROJECT

A development of 674. Hours to be arranged.

EARTH SCIENCE

*EM 412. ELECTRON MICROSCOPY

3 hrs.

Operation of the electron microscope for optical and electron diffraction studies. Applications and specimen preparation techniques. Two lectures and two laboratory periods. Offered second semester.

MET 438. INTRODUCTION TO PHYSICAL METALLURGY

3 hrs.

A study of the basic principles of the physics of metals. Topics include characteristics of metals, iron-carbon system, mechanical properties, hardening mechanisms, diffusion, powder metallurgy, and corrosion. Three lectures. Prerequisites: PH 112 and MIN 201.

MIN 201. MINERALOGY

3 hrs.

Introduction to crystallography and crystal chemistry and the study of minerals and their concentration and identification by chemical and physical methods. Two lectures and one laboratory period.

MIN 401. SILICATE MELT SYSTEMS

2 hrs.

Application of thermodynamic principles to the crystallization of silicate melts. Equilibrium and non-equilibrium processes; effects of volatile and trace components and of high pressures. Emphasis on naturally occurring systems, origin of igneous rocks, and experimental petrology. Prerequisite CE 437 or equivalent.

MIN 508. CLAY MINERALOGY

3 hrs.

Crystalline structure, methods of analysis and genesis of clay minerals are covered. The surface chemistry of solids and the structure theory of water are studied in connection with advanced work on clay-water systems. Three lectures.

PET 302. PETROGRAPHY

3 hrs.

Petrographic microscopy, including optical mineralogy; linear, point, and counting methods for quantitative analysis of mineral mixtures; particle size distribution; thin sections, polished sections, and immersed grains. Two lectures and one laboratory period. Offered second semester.

*PET 401. ADVANCED PETROGRAPHY

Advanced work in the use of the petrographic and metallographic microscopes and accessories in the examination and photography of ceramic raw materials and products. One laboratory period. Offered first semester. Prerequisite PET 302.

*X-RAYS 411. APPLIED X-RAYS

3 hrs.

Basic X-ray physics, x-ray crystallography, and applications of x-ray diffraction to the study of solids. Applications include powder methods, single crystal methods, and an introduction to crystal structure analysis. Two lectures, one laboratory.

*X-RAYS 412. X-RAY CRYSTALLOGRAPHY

3 hrs.

Topics of study will include space group symmetry, equipment sets, relation of crystal

*May be taken for graduate credit.

form and physical properties to symmetry. Laue, Weissenberg, precession, and other experimental methods for obtaining crystal information will be studied and used. Diffraction intensities and structure analyses will be made. Two lectures, one laboratory.

ECONOMICS

ECON 211-212. PRINCIPLES AND PROBLEMS OF ECONOMICS. (L.A. College) each semester 3 hrs.
A study of modern economic society, its organization, operation, and control. Not open to first year students.

ENGINEERING GRAPHICS

EG 101. ENGINEERING GRAPHICS 3 hrs.
The fundamental principles of drafting, descriptive geometry, and graphical presentations are studied both freehand and with instruments.

EG 313 and 314. ADVANCED DRAFTING each semester 2 hrs.
Technical or architectural drawing. Prerequisite EG 101-102.

ENGLISH

ENG 101-102. ENGLISH COMPOSITION each semester 3 hrs.
The study and application of basic principles of verbal communication; correctness, clarity, concreteness, and effective organization.

**ENG 223 and 224. READINGS IN MODERN LITERATURE each semester 3 hrs.
Readings in 20th century fiction, drama, and poetry. The aim of the course is to help students who are specializing in non-literary fields of study to read with understanding and enjoyment the worthwhile literature of their own time.

ENG 335. TECHNICAL WRITING 2 hrs.
Practice in routine business correspondence followed by a study of the engineering report, technical article, and research paper.

GLASS SCIENCE

GL 301. GLASS MANUFACTURE 5 hrs.
The glass melting process is studied in relation to refractories, containers, temperatures, 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

**Required for graduation (Ceramic Art students only).

of glassmaking, working processes, annealing, finishing, defects and testing of commercial glassware. In the laboratory, experiments on melting and forming of various glasses, and on measurement of density, softness, annealing and strain points, chemical durability, stress optical constant, and other properties of glass will be carried out. With the permission of the instructor, the lectures may be taken as a three-hour course without the laboratory. Three lectures, two laboratory periods. Offered first semester.

GL 302. PROPERTIES I 5 hrs.
The properties of glass are studied with particular attention to methods of measurement. Density, thermal expansion, viscosity, surface tension, and the stress—optical properties are covered. The calculation of properties from composition, annealing, measurement of strain and heat shock resistance are treated mathematically. Laboratory is a continuation of the laboratory of GL 301. Three lectures, two laboratories. To be taken with PET 302.

GL 351-352. LABORATORY each semester 2 hrs.
Experiments on melting various glass compositions and determination of properties of glass. Precision of measurement is emphasized.

GL 381-382. GLASS FORMING each semester 1 hr.
Practice in off hand blowing, pressing, mold blowing and semi automatic bottle manufacture.

*GL 403. PROPERTIES II 3 hrs.
Text, lectures, assigned reading, individual reports on research papers. The physical chemical, and optical properties of glass are intensively studied. Three lectures. Offered first semester.

GL 404. GLASS-MELTING UNITS 3 hrs.
Studies on the design, construction, and operation of glass furnaces. Thermal efficiency, heat economy, and application of electric energy are considered. Two lecture hours, one laboratory period. Prerequisites CH 343, CE 431.

*GL 406. STRUCTURE OF GLASS 2 hrs.
Three credit hours may be given for special assignment. 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. Offered second semester.

*GL 408. MATERIALS OF GLASS MANUFACTURE 3 hrs.
The properties, functions, thermal behavior, and applications of various materials used in the manufacture of glass and ceramic products are considered from the concept of the glassy and crystalline states. Occurrence, evaluation, recovery, and beneficiation of the basic materials are studied. Particular emphasis is placed on the role of thermal behavior in glasses and glassy ceramics. Selection of proper materials is also emphasized. Methods of testing purity and avoidance of impurities are stressed. The chemical toxicity of various raw materials is pointed out, and methods of safe handling are recommended.

*May be taken for graduate credit.

***GL 410. GLASS-METAL SEALS**

Special problems encountered in fabrication of glass-metal seals.

2 hrs.

GL 461-462. GLASS THESIS

Laboratory study of a problem selected in conference with the department head. Review of literature. Two laboratory periods.

each semester 2 hrs.

***GL 471-472. GLASS SEMINAR**

Talks on advances in the science and technology of glass and related fields of ceramics by invited speakers or by senior or graduate students. A written paper is required for graduate credit. Glass seminar is required for juniors, seniors, fifth year students, and graduate students registered in the Glass Department.

each semester 1 hr.

GL 510. GRADUATE THESIS

Research on a glass problem selected in conference with a faculty member approved by the appropriate Graduate Committee. Work will be supervised by the student's advisory committee.

hours to be arranged

GL 591. THE VITREOUS STATE

For Graduate Students. The composition, structure and energetics of the non crystalline solid state. Prerequisites: MA 220 and CH 345. Two lectures.

2 hrs.

MATHEMATICS

MA 108. THE NATURE OF MATHEMATICS

Special topics chosen from topology, set theory, number theory and the history and philosophy of mathematics with special concern for the nature and significance of mathematics. Not open to mathematics majors.

3 hrs.

MA 118. ELEMENTARY PROBABILITY AND STATISTICS

An introduction to probability and statistics with applications in the behavioral and physical sciences. Prerequisite Mathematics 117 or Mathematics 217.

3 hrs.

MA 217-218. ELEMENTARY ANALYSIS

The real numbers, vectors in the plane, analytic geometry and the calculus of one variable with applications.

each semester 4 hrs.

MA 219-220. INTERMEDIATE ANALYSIS

A continuation of 217-218 with an introduction to multivariate calculus, sequences and series and differential equations.

each semester 3 hrs.

MA 321-322. MODERN ALGEBRA

The elements of modern abstract algebra including fields, integral domains, rings, groups, polynomials, vector spaces and metric vector spaces. Prerequisite Mathematics 220.

each semester 3 hrs.

MA 415. INTRODUCTORY COMPLEX ANALYSIS

3 hrs

Analysis extended to the complex numbers including differentiation, integration, analytic continuation, Taylor series, Laurent's expansion and the theory of residues. Prerequisite Mathematics 220.

MA 465-466. PROBABILITY AND STATISTICS

each semester 3 hrs.

The theory and applications of probability and statistics including distributions of various statistics, estimation, decision theory and the analysis of variance. Prerequisite Mathematics 220.

MA 467-468. ADVANCED CALCULUS

each semester 3 hrs.

This course is designed to train the student in mathematical rigor. It is a supplementary study of calculus with emphasis on the axiomatic foundation of analysis plus the study of partial differentiation, infinite series, improper integrals, line integrals, and surface integrals. Prerequisite Mathematics 219.

MA 501. VECTOR ANALYSIS

3 hrs.

A study of basic algebraic operations on vectors, vector differentiation, and vector integration including divergence, curl, curvilinear coordinates, line and surface integrals, gradients and potentials, with applications in scientific areas. Offered first semester. Prerequisite three hours of Advanced Calculus, or consent of instructor.

MA 503. APPLIED MATHEMATICS

3 hrs.

Content of course varies according to the needs of the students. Topics may include infinite series, Fourier series and orthogonal functions, special partial differential equations, Laplace and Fourier transforms, and items from Higher Algebra and Complex Variables. Prerequisite three hours of Advanced Calculus and three hours of Differential Equations.

MA 505. PARTIAL DIFFERENTIAL EQUATIONS

3 hrs.

Origins and formal methods of solution of the familiar partial differential equations, including the wave equation, equation of heat flow and diffusion, Sturm-Liouville systems, and the equations of Bessel, Legendre, Hermite, and Laguerre. Properties of the solutions. Methods of Charpit, Jacobi, and Monge. Prerequisite three hours of Differential Equations.

PHYSICS

111-112. INTRODUCTORY GENERAL PHYSICS

each semester 3 hrs.

A lecture course in the principles of physics. Topics include mechanics, heat, sound, electricity, magnetism, optics, and modern physics. The Physics 111-112, 281-282 sequence is recommended for all University science students. Physics 111-112 may, however, be a terminal course, with or without the Physics 113-114 laboratory. Some knowledge of algebra and trigonometry is assumed. Calculus is not employed.

281-282. INTERMEDIATE GENERAL PHYSICS

each semester 4 hrs.

A calculus-level lecture/laboratory course in mechanics, electricity, magnetism, and

modern physics. Physics 112 and Mathematics 218 are prerequisites. Well-qualified students will have these prerequisites waived. Physics 111-112 and 281-282 constitute the General Physics program which is recommended for all University science and engineering students.

PH 541. MODERN PHYSICS

3 hrs.

An introduction to the fundamentals of classical and quantum statistics and wave mechanics.

PH 542. INTRODUCTION TO SOLID STATE PHYSICS

3 hrs.

An introduction to the physics of solids with topics covering electrical and magnetic thermal, optical and mechanical properties and the physical models to which these properties are related.

PH 565. LATTICE DYNAMICS

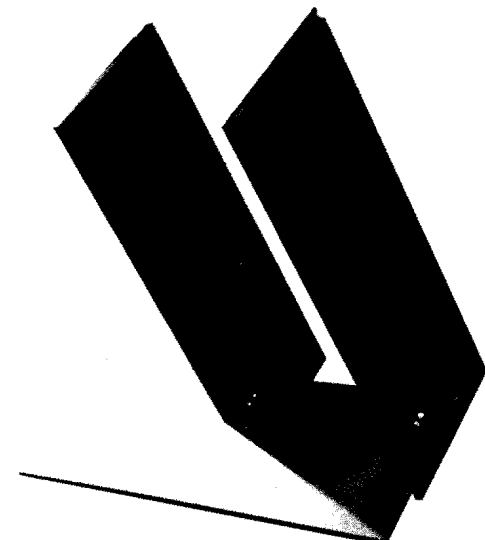
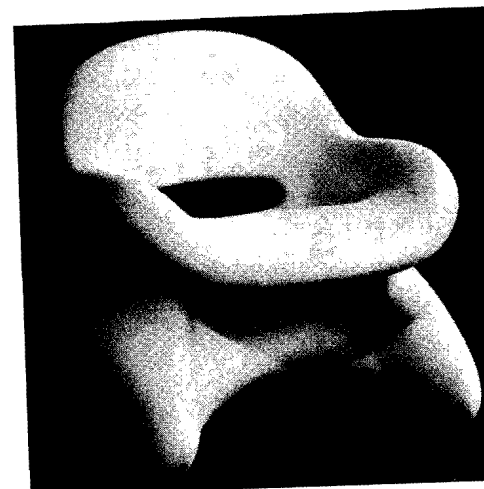
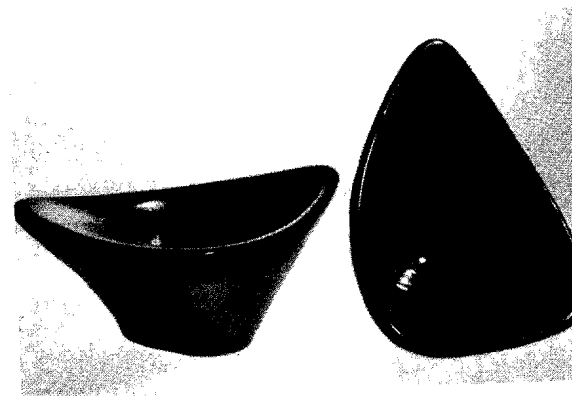
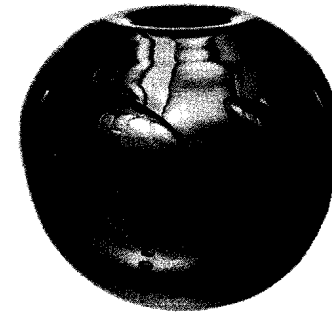
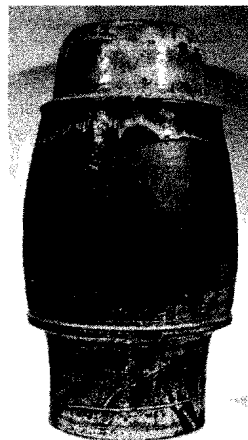
3 hrs.

Discussion of monatomic, diatomic, and one dimensional models. This course covers specific heat, infrared adsorption, compressibility, thermal expansion relative to the lattice dynamics of solids. Three lectures.

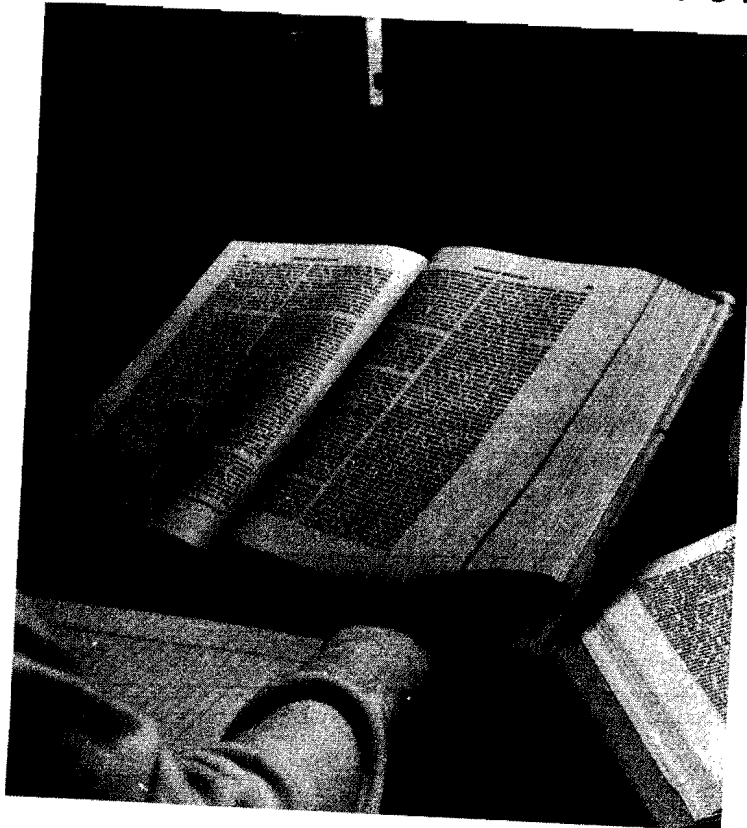
PH 546. QUANTUM MECHANICS

3 hrs.

This course presents further developments of quantum theory beyond PH 541 including matrix and state vector formalisms with illustrations and applications in solid state physics wherever possible. Three lectures. Offered second semester. Prerequisite PH 541.



GRADUATE SCHOOL



Graduate programs are offered in keeping with educational demands and with the potential of certain departments in the University to make distinctive contributions at an advanced level. The Graduate School coordinates and provides the desired unity for the graduate offerings in both the College of Liberal Arts and the State University of New York College of Ceramics.

The Departments of English and Psychology have programs leading to the Master of Arts degree. The course of graduate study in Psychology is a specialized program, devoted to the training of School Psychologists, and is registered with the New York State Department of Education. Students may receive certification in this area.

The Department of Education, in cooperation with several other departments, offers a number of programs leading to the Master of Science in Education degree, which are registered with the New York State Department of Education. These programs are designed for teachers in service or in preparation, or others who require advanced degrees or advanced study in order to obtain provisional or permanent certification (a) in teaching (b) in guidance and counseling, or (c) in administration and supervision.

Advanced undergraduate or graduate level work is available in the following departments: Art, Biology, Chemistry, Economics and Business Administration, English, Geology, History and Political Science, Mathematics, Music, Psychology, Sociology.

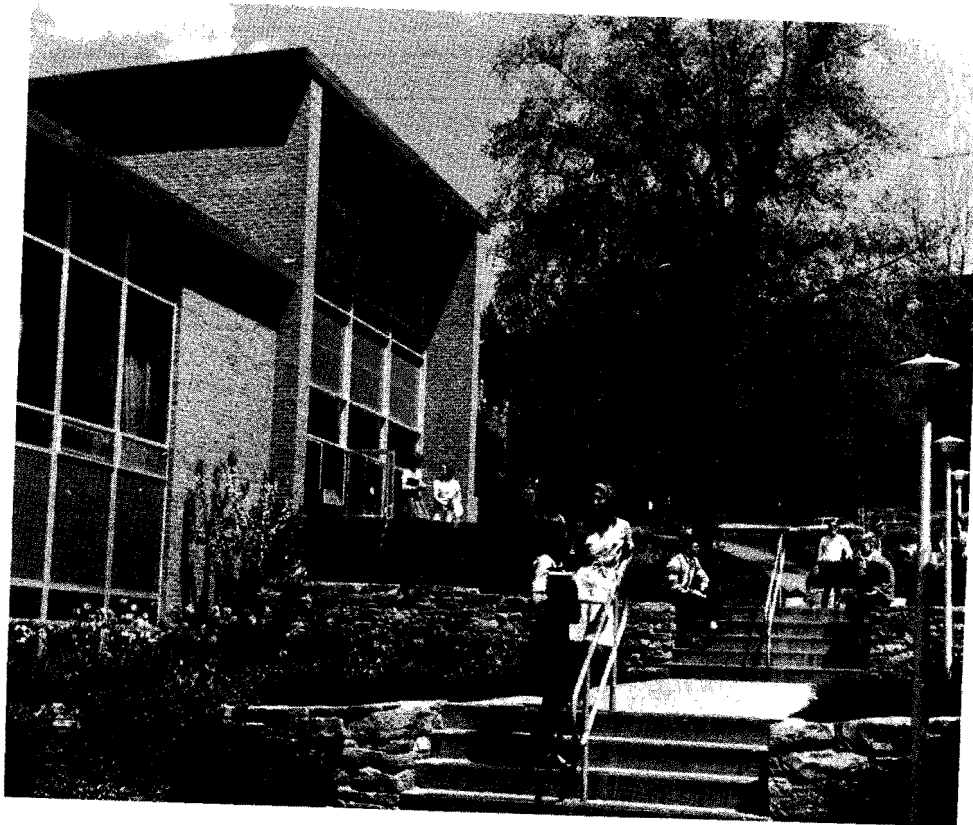
Cooperative plans with Syracuse University and the State University of New York at Buffalo permit a student to do part of the work toward a Doctor of Education degree on the Alfred campus.

The Department of Ceramic Art offers a two-year program leading to the Master of Fine Arts degree. The Master of Science degree may be earned in Ceramic Engineering, Ceramic Science, or Glass Science in programs offered by the corresponding departments.

The College of Ceramics offers a program in Ceramics leading to the Doctor of Philosophy degree.

The specific graduate degree requirements, as well as detailed descriptions of courses and programs, are given in the catalog of the Graduate School. All inquiries about these programs and degrees should be directed to the Dean of the Graduate School.

CAMPUS LIFE



Campus life has as its core, the academic program. From this core a variety of planned co-curricular activities develop, primarily in the areas of recreation and athletics, dramatics, music, and student government. In addition, there are other areas of activity such as cultural programs, departmental clubs and organizations, fraternities and sororities, which also serve to help each student to become a member of the University community.

ORIENTATION

Orientation week in September introduces the freshman student to the academic and social traditions of the University. During the orientation period the student begins to experience one of the most significant traditions: the friendly relationship between student and teacher. The program includes individual testing, becoming acquainted with fellow-students and Alfred activities, meeting with Deans and faculty advisors, and registering for courses.

After the first day of class, orientation expands into a broader education. Formal instruction in the classroom is supplemented with individual conferences with teachers or with gatherings at faculty homes. Formally and informally, the student will find mature and friendly assistance ever-present.

STUDENT LIFE

Traditionally recognized as a "friendly campus in a friendly village," the College remains small enough to continue to express concern for the individual student. Seminars and classes are taught by fully qualified professional members of the faculty, who consider teaching and the continued search for knowledge their primary responsibility.

ties. There are many opportunities for student-faculty exchange of ideas on matter of mutual interest.

Life at Alfred however, is more than classrooms, laboratories and libraries, important as they are. The opportunity to develop special abilities and interest is an important part of college life. At Alfred, clubs and organizations offer the student numerous outlets for his talents. There are opportunities in music (University Singers, Wind Ensemble, R.O.T.C. Band, Orchestra), in publications (Alfred Review, newspaper, the Fiat Lux, yearbook-Kanakadea), and in other far-ranging avocations, from government (Student Senate) to drama (the Footlight Club.)

Opportunities for participation in healthful athletic activities go far beyond formal classes in physical education. Students are encouraged to take part in a full program of intramural sports and intercollegiate athletics.

Men's and women's intramural programs are open to those who wish to compete more or less for fun. Those who wish to challenge athletes from other colleges may chose to represent the Alfred Saxons in football, basketball, track, cross-country, lacrosse, soccer, golf, tennis, wrestling and rifle. Alfred University is a charter member of the Independent College Athletic Conference with Clarkson, Hobart, R.P.I., St. Lawrence and Union.

There are fraternities and sororities, honorary and service societies, including the national Blue Key for men, Keramos, National Professional Honorary Ceramic Engineering Society and Gold Key for women.

Film buffs have a chance to preview outstanding films and exercise their discretion in the selection of pictures to be shown to students and faculty. Young artists have frequent opportunities to display their work in the campus center.

The student who feels he does not have the specific skills of a public nature still has the opportunity to participate in various phases of campus life. An art exhibit is nothing without viewers; a dramatic performance would soon die without an audience. The complex learning process of today compels the serious student beyond the daily routine of classes, lectures, term papers and assignments. Learning comes from the interaction of ideas among students, from participation in clubs and organizations and from the experience of independent actions.

Cooperation in all phases of college life—hearing outstanding speakers, attending concerts and recitals, cheering at sports events, or engaging in the lively exchange of ideas—these are all part of the moving experience shared by all Alfredians.

RELIGIOUS LIFE

Religious Life on the campus is coordinated by the Director of Religious Program. Religious leaders visit the campus for public addresses, forums, worship services, and personal counseling.

Many organizations and churches serve the religious interests of students. Student organizations include: The Cooperative Board for Christian Campus Ministry at Alfred (Interdenominational), Chi Rho (Seventh Day Baptist), Canterbury (Episcopalian), Wesley Foundation (Methodist), Newman Club (Roman Catholic), B'nai B'rith Hillel Foundation (Jewish), and Christian Science. Local churches are: The Union University Church (Inter-

denominational), The First Seventh Day Baptist Church, St. Alban's Episcopal Mission, A Friends Meeting (Quaker), St. Jude's Chapel (Roman Catholic), The Church of the Nazarene, Alfred Methodist Church, Calvary Fellowship (fundamental evangelical). The Hillel Foundation also provides a worship service.

STUDENT HEALTH SERVICE

The Student Health Service is supervised by the University Physician and staff of registered nurses. Before entering college, each undergraduate must have a physical examination. X-rays are a required part of a tuberculosis prevention and control program.

The University Health Center provides facilities for the treatment of minor illnesses and injuries, ordinary clinical laboratory examinations, minor X-ray examinations, infra-red and short-wave therapy, whirlpool baths, and ordinary nursing care. The University will treat chronic illnesses within the limits of its facilities but cannot assume any responsibility for such illnesses which exist prior to the student's admission to the University. More serious cases of illness or contagious disease are treated in hospitals in neighboring Hornell. When a student needs hospitalization, he becomes a private patient with the privilege of choosing his own hospital and physician and must assume all financial obligations for such subsequent medical care supplied by or in the hospital. All full-time undergraduate and graduate students are required to pay a University Health Fee. This fee includes participation in the University Sickness and Accident Insurance Program. The program provides 12 month sickness and accident coverage for students, 24 hours a day, on or off campus, subject to the exclusion of the policy. At registration, each student will be provided with a certificate including complete information regarding the insurance covered in the program.

GENERAL INFORMATION

COLLEGE YEAR The college year consists of two semesters of about 17 weeks each. During the summer, there are three sessions totaling 12 weeks which provide opportunities for those who wish to accelerate their programs or make up deficiencies (See University Calendar).

REGISTRATION All students will register on the days designated in the calendar. Any student who does not register at the appointed time in the regular college year will be charged a \$5.00 late registration fee. This late registration fee will also be charged for changes in courses selected if made at the student's request after the period regularly allowed for changes.

CLASS ATTENDANCE Regular class attendance is required for all freshmen, sophomores, and students on condition. The individual faculty member may grant to all juniors, seniors, and special students in good academic standing permission to absent themselves from his classes.
It is understood that the individual instructor may revoke or deny this permission at any time.
It is also understood that all students are expected to attend Founders Day, Honors Convocation, and other all-University programs.

COUNSELING AND GUIDANCE

Although normal, successful progress in the studies undertaken is the responsibility of the individual student, the administration and faculty of the University are active in offering guidance and help. Each student has a faculty adviser and should feel free to consult, formally or informally, any University faculty or staff member who might be of assistance. A counseling office is maintained for specialized services concerning aptitudes, study problems, and other guidance questions.

The first week of the academic year is primarily devoted to orienting entering students to university life and to their scholastic work.

Students should give serious attention to post-college plans early in their college careers and should consult with the chairmen of the departments concerned, especially if these plans involve graduate study.

Courses are numbered as follows:

- | | |
|---------|---|
| 100-199 | courses primarily for first-year students. |
| 200-299 | courses primarily for second-year students. |

- | | |
|--------------|---|
| 300-399 | courses primarily for upperclassmen. Not regularly open to graduate students. |
| 400-499 | courses primarily for upperclassmen. May be taken for credit by graduate students. |
| 500 and over | graduate courses. May be taken by a senior if his adviser and the instructor approve. |

Some 300 and 400 courses may be taken for credit by graduate students by special arrangements made in advance with the chairman of the department offering the course and the Dean of the Graduate School. When taken for graduate credit, the course number must be followed by the letter "G" entered at the time of registration. In many instances it will be quite appropriate for advanced undergraduate students to take 100 and 200 courses particularly in subjects outside their major area. *Note: The College of Ceramics uses the 300 and 400 numbers to designate courses of the third and fourth years respectively. Those 400-series courses which are starred may be taken for graduate credit.*

Hyphenated numbered courses (i.e., 101-102 or 105-106) are year courses subject to special regulations:

- A student is expected to complete satisfactorily both semesters of the course (credit for one semester may be obtained only by special permission of the Chairman of the Department followed by the approval of the Dean).
- An "F" grade for the first semester bars the student from enrolling for the second semester.
- A student may not begin these courses in the second semester.

In addition to year courses, successive courses of one semester each may be listed together (i.e. 101 and 102 or 461 and 462) to express a desirable continuity without bringing to bear the year-course regulations.

GRADES AND INDICES

System of Grading. The work of students in each course is graded as follows:

| | | | |
|----|---------------|----|-------------------|
| A | superior | F | failure |
| B+ | very good | I | incomplete |
| B | good | NR | no report |
| C+ | above average | P | passing |
| C | average | WP | withdrawn—passing |
| D+ | below average | WF | withdrawn—failing |
| D | poor | AU | audit |
| | | NC | no credit |

The withdrawal grades are used only if the student processes his withdrawal from a course prior to the dates published in the *Schedule of Courses and Directions for Registering*. Incomplete grades not made up within the succeeding semester will be recorded as F.

The lowest passing grade is D; however, a D earned in a course prerequisite to other courses will not permit the student to register in these courses. For example, a D in Mathematics 218 will give the student credit for the course, but he will not be

permitted to register in any other course for which Mathematics 218 is a prerequisite. If the stated prerequisite is a year course (hyphenated), the average for both semesters must be at least D+.

Grading for graduate students is on a scale of A, B, C, or F. A graduate student must have an average of B or better in all courses to receive an advanced degree. When undergraduates enroll in a course primarily for graduates (500 and over) they will be graded on the same scale (A, B, C and F) and will receive point values of 4.0, 3.0, 2.0 or 0.0 in accordance with the table below.

Juniors and seniors who are in good academic standing will be permitted, if they so desire, to designate one elective course each semester to be taken for a grade of "P" (pass) or "F" (fail), provided they have not been previously enrolled in the course. The designation of such a course must be approved by the student's major adviser in accordance with faculty-adopted regulations.

All grades remain on the student's permanent record. If a course is repeated and a higher grade is earned, its index replaces that of the former grade.

Note: A student wishing to take a summer school course elsewhere should obtain in advance written permission from his academic dean, especially if he wishes to be assured that the credit earned will be accepted by Alfred University. Requests for such permission should be accompanied by the printed course description from the catalog of the school the student wishes to attend.

Scholarship Indices. In the evaluation of scholarship the following system of point values (indices) is used:

Each semester hour at

| | | | |
|----------|------------|----------------------|---------------------|
| A | 4.0 points | D+ | 1.5 points |
| B+ | 3.5 points | D | 1.0 point |
| B | 3.0 points | F | 0.0 point |
| C+ | 2.5 points | WF | 0.0 point |
| C | 2.0 points | WP, I, NR, P, AU, NC |no point value |

A student's index is obtained by dividing the total number of points by the total number of hours.

| | | |
|-----------|-------------------------------------|-----|
| SEMESTER | First year, each semester | 1.7 |
| STANDARDS | Second year, each semester | 2.0 |
| | Third year, each semester | 2.0 |
| | First semester of fourth year | 2.0 |

The student's year is determined as follows:

- Less than 2 full semesters in attendance—first year
- 2 but less than 4 full semesters in attendance—second year
- 4 but less than 6 full semesters in attendance—third year
- 6 or more semesters in attendance—fourth year
- Two summer sessions will be counted as one semester

Such ranking will also be used to determine a student's eligibility to enroll in a course when the description specifies the year in college.

HONORS, PRIZES, AND AWARDS

UNDERGRADUATE HONORS. A Dean's Honors List is published at the end of each semester. This list is composed of the names of full-time matriculated students who have a semester's scholarship index of at least 3.30, who have no college entrance condition, and who have no incomplete grades for the semester.

A Dean's Honors List is also published for the school-year.

SENIOR HONORS. Three grades of honors are awarded, upon faculty approval, to seniors based on their cumulative scholarship attainment as evaluated through the middle of their senior year, viz.:

(a) *Summa cum laude*, or highest honors, to those having a scholarship index of 3.90 and no grade below B.

(b) *Magna cum laude*, or high honors, to those having a scholarship index of 3.70 and no grade below C.

(c) *Cum laude*, or honors, to those having a scholarship index of 3.30

DEPARTMENTAL HONORS. These honors may be awarded to seniors at the time of their graduation by the departments in which they have pursued their major studies. The specific requirements for these honors are determined by each department. The general requirements for all departments have been adopted by the faculty as follows:

A candidate for departmental honors shall have (1) attained a cumulative index of 3.30 in the courses of his major field, (2) earned at least two semester hours of credit in independent study, and (3) passed an oral examination in his major and allied fields, conducted by a committee selected by the major department. Candidates for departmental honors will be recommended by their respective departments and approved by the faculty.

Several scholarships and fellowships are awarded for outstanding academic accomplishment. The number of awards and the amounts of money involved vary from year to year. During the school year 1964-65, the following awards were made: To seniors, the Alcoa Foundation Scholarship (\$625) and the Pennsylvania Glass Sand Corporation Scholarship (\$600); to entering juniors, the Ferro Enamel Company Scholarship (\$300); to entering sophomores, the Ferro Enamel Company Scholarship (\$200), the Scholes Award (Ceramic Association of New York \$100), and the Transelco Scholarship (\$100).

The Mary Goff Crawford Student Personal Library Award. This award has been established by Dr. and Mrs. Finla G. Crawford of Andover, New York, in memory of his mother who was a student at Alfred University from 1878-1880. The income of this fund will be given annually to seniors and freshmen who enroll in competition for three annual prizes by entering their personal libraries. The senior possessing the best personal library will receive a \$50.00 award. Prizes of \$15.00 will be given to the second place senior and the freshman having the best personal book collection. The student library will be judged by an Award Committee composed of the Chairman of the Faculty Library Committee and two faculty members appointed annually to serve as judges. Committee decision will be based on breadth of the general collection

or merit as special collection of works by a single writer, or first editions, or books related to the student's discipline, or some other special category. The library must consist of at least 35 books, owned by the student and in his possession at the University, and accessible to the committee for inspection.

The Mary Wager Fisher Literary Prize. William Righter Fisher, Esq., of Philadelphia, contributed \$1000 to found in perpetuity a literary prize at Alfred University in memory of his late wife, Mary Wager Fisher, of the Class of 1863. The income of this fund will be given annually to one or more students as a prize for excellence in literary composition. The Chairman of the Department of English is chairman of the committee of award.

Hitchcock Research Prize: This award was established by Dr. and Mrs. Daniel Sass in memory of Raymond Hitchcock, M. D., a well loved local physician. The prize of \$35.00 is presented to an undergraduate student judged to have conducted the best piece of research in the experimental sciences. Originality, organization, experimental technique, and clarity of presentation of results are the factors considered in evaluating the works submitted. The selection of prize winners is made through the Sigma Xi Club of Alfred University.

The Major Edward Holmes Award. A prize of \$75 is awarded to the student in the College of Ceramics who is selected by a faculty committee as winner of the local student speaking contest sponsored by the American Ceramic Society. The award is made by the Ceramic Association of New York.

Brenda Johnson Memorial Award. This award, in the amount of \$50, is made annually to the outstanding senior organ student. It is supported by a fund established in memory of Brenda Carol Johnson, a 1960 graduate of Alfred University.

Michael Levins Memorial Scholarship. This scholarship has been established by the parents of Michael C. Levins. Michael C. Levins was accepted for admission as a member of the freshman class of 1963. His untimely death occurred before he was able to enroll in Alfred. The \$500 scholarship sponsored by his parents and the Reward Ceramic Color Manufacturers Inc. of Elkridge, Maryland will be presented each year to a student in the junior class of ceramic art who has demonstrated outstanding ability and potential in that field.

W. Varick Nevins III Prize in Mathematics. This award was established by the family and friends of W. Varick Nevins III, member of the Class of 1932, faculty member at Alfred from 1937 to 1966. This award will be presented to an undergraduate for excellence in Mathematics. The Chairman of the Department of Mathematics is chairman of the committee of award.

Natosha Goldowski Renner Prize in Physics. This award, established in memory of Dr. Natosha Goldowski Renner, assistant professor of Physics from 1956 to 1962, is presented to that student in the College of Liberal Arts who has shown excellence and promise in the study of physics.

The Howard Jon Schnabolk Memorial Award. To recognize and to encourage diligent student creativity in the performing and productive arts that comprise the ensemble of

theater, an annual award has been established in memory of Lt. Howard Jon Schnabolk, '65, former theater Lighting Director, Past President of the Alfred University Footlight Club and Chairman of its Executive Committee, who lost his life in Viet Nam on the third of August, 1967, at the age of twenty-three.

The Tau Delta Phi Scholarship Medal. The Tau Delta Phi social fraternity annually awards this scholarship medal to the University student who has earned the highest cumulative scholarship index in three and one-half years of study.

Academically outstanding freshmen women may be elected to either of the national honorary societies, Alpha Lambda Delta or Cwens. In liberal arts the top upperclass students may be elected to Eta Mu Alpha. Keramos is the national honorary ceramic engineering fraternity to which outstanding engineering students may be elected.

CONDITION, SUSPENSION, DISMISSAL

A student whose index at the end of any semester falls below the minimum semester standard will be placed "on condition." Further, a student who has a low cumulative index, or low grades in critical prerequisite courses, may also be placed "on condition." A student "on condition" may, or may not, be permitted to participate in certain co-curricular activities or to carry a full curricular load. The students "on condition" are urged to take full advantage of all University advisory sources available to them.

A student "on condition" who fails to attain the required semester index or fails to meet other specified academic requirements may be suspended for one or two semesters. However, any student "on condition" who is unable or unwilling to improve his academic standing significantly will be dismissed.

A student suspended for academic reasons may be granted the opportunity to return on a conditional basis. A written request for readmission must be made to the academic dean at least two months before the anticipated return.

The University reserves the right to suspend or dismiss at any time students whose conduct is considered undesirable. Suspension or dismissal may or may not be accompanied by a public statement concerning the reason for such action.

Students "on condition" or "on extended condition" will lose the privilege of having a car on campus. Only commuters are exempt from this ruling.

WITHDRAWAL

A student who is obliged for any reason to withdraw from the University during the academic year will first consult with the Dean of Students or the Associate Dean of Students. Students who plan to withdraw at the end of either semester are also required to consult with the Dean of Students or Associate Dean of Students. Initiating withdrawal in this manner is primarily for proper guidance but is also necessary if the student is to receive refunds that are due. A student who withdraws during the summer must notify the Dean of Students or the Associate Dean of Students on or before July 1 if his \$50.00 advance deposit is to be refunded.

GENERAL UNIVERSITY REGULATIONS

1. Attendance at the University is a privilege and not a right. The University reserves the right, and the student concedes to the University the right to require the withdrawal of any student at any time for any reason deemed sufficient to it, and no reason for requiring such withdrawal need be given.
2. The traditions and principles of the University prohibit any conduct in violation of law or out of harmony with the standards of good society.
3. The University has the authority to enforce its social regulations at these times: while school is in session and during the vacation and/or recess period while the student is within the Village of Alfred or on campus.
4. The University reserves the right to cancel any course if registration for it does not justify continuance.
5. The University also reserves the right at any time to make changes deemed advisable in the rules and regulations and in the tuition and fees.
6. The University has general supervision of all student housing. Students may reside only in such houses as have University approval.
7. Resident freshmen may not have motor vehicles or motorcycles either on campus or in the Village of Alfred for the academic year. All permitted student motor vehicles must be registered with the Superintendent of Buildings and Grounds and a \$5.00 fee paid at the time of registration for classes. Cars brought to Alfred later in the school year must be registered immediately. Registration is for the academic year or remaining portion thereof. Commuters from outside the village and students living in University dormitories will be assigned to definite parking areas. Students living in the village may not park on campus during regulated parking hours, and no student may drive to classes unless he is physically handicapped. The owner of an unregistered vehicle will surrender the license plates for a period of one month.
8. Students who wish to marry and continue in the University must notify the Personnel Deans in advance of the marriage, and present evidence of the parents' knowledge or consent. The University reserves the right to require the withdrawal of a student who marries secretly.
9. The possession of, or consuming of any alcoholic beverage in University buildings or on University grounds is prohibited. This regulation does not apply to special functions in Ade Hall or University owned fraternity houses.

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University of British Columbia, Canada

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State University at Binghamton
State University at Buffalo
State University at Stony Brook

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City)
Upstate Medical Center at Syracuse

COLLEGES OF ARTS AND SCIENCE

| | |
|----------------------|------------------------|
| College at Brockport | College at New Paltz |
| College at Buffalo | College at Oneonta |
| College at Cortland | College at Oswego |
| College at Fredonia | College at Plattsburgh |
| College at Geneseo | College at Potsdam |

(Three additional Colleges of Arts and Science are in varying stages of development. Two four-year campuses, in Westchester County at Purchase and in Nassau County at Old Westbury are under development. Old Westbury will admit its first students in limited numbers in September 1968. The third campus will be upper-division (junior-senior years) in concept and located in the Utica-Rome-Herkimer area. Master's level programs will be offered at all three campuses.)

SPECIALIZED COLLEGES

College of Forestry at Syracuse University
Maritime College at Fort Schuyler (Bronx)
College of Ceramics at Alfred University
College of Agriculture at Cornell University
College of Home Economics at Cornell University
School of Industrial and Labor Relations at Cornell
University
Veterinary College at Cornell University

AGRICULTURAL AND TECHNICAL COLLEGES (Two-year)

Agriculture and Technical Colleges at:
Alfred
Canton
Cableskill
Delhi
Farmingdale
Morrisville

COMMUNITY COLLEGES

(Locally-sponsored, two-year colleges under the pro-
gram of State University)

Adirondack Community College at Glens Falls
Auburn Community College at Auburn
Barrough of Manhattan Community College at New
York City
Bronx Community College at New York City
Broome Technical Community College at Bing-
hamton
Community College of the Finger Lakes at Can-
andaigua
Corning Community College at Corning
Dutchess Community College at Poughkeepsie
Erie County Technical Institute at Buffalo
Fashion Institute of Technology at New York City
Fulton-Montgomery Community College at Johns-
town
Genesee Community College at Batavia
Herkimer County Community College at Ilion
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Jefferson Community College at Watertown
Kingsborough Community College at Brooklyn
Mohawk Valley Community College at Utica
Manrae Community College at Rochester
Nassau Community College at Garden City
New York City Community College of Applied Arts
and Sciences at Brooklyn
Niagara County Community College at Niagara
Falls
Onondaga Community College at Syracuse
Orange County Community College at Middletown
Queensborough Community College at New York
City
Rackland Community College at Suffern
Staten Island Community College at New York City
Suffolk County Community College at Selden
Sullivan County Community College at South Falls-
burg
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Five additional community colleges to be sponsored by Clinton, Columbia-Greene, Essex-Franklin (North Country), Schenectady and Tompkins-Cortland Counties have been approved by the Board of Trustees and are in varying stages of development. Clinton and North Country plan to admit students in September 1968.

CALENDAR

FIRST SEMESTER 1968

| | | |
|-------------|---------------------|--|
| Sept. 15-17 | Sunday Tuesday | Orientation Program for Freshmen and Transfer Students |
| 16-18 | Monday Wednesday | Registration |
| 19 | Thursday | Instruction begins at 8 a.m. |
| 19 | Thursday | Registration of Part-time graduate students 5-8 p.m. |
| Oct. 8 | Tuesday | Opening of College Convocation and Founders Day |
| 19 | Saturday | Homecoming |
| Nov. 1-2 | Friday Saturday | Fall Parents' Weekend (Parents of Freshmen and new transfer students) |
| 13 | Wednesday | Mid-semester grades 12 M. |
| 27 | Wednesday | Thanksgiving recess begins at 10 a.m. |
| Dec. 2 | Monday | Classes resume at 8 a.m. |
| 18 | Wednesday | Christmas recess begins at 10 a.m. |

1969

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|--------|--------------------|---|
| Jan. 6 | Monday | Instruction resumes at 8 a.m. |
| 16-17 | Thursday Friday | Study Days |
| 18 | Saturday | Final examinations begin |
| 27 | Monday | Registration of part-time graduate students (for second semester) 5-8 p.m. |
| 28 | Tuesday | Final examinations and first semester end |

SECOND SEMESTER

| | | |
|---------|--------------------|--|
| Feb. 5 | Wednesday | Registration of New Students |
| 6 | Thursday | Instruction begins at 8 a.m. |
| Mar. 14 | Friday | St. Patrick's Festival—half holiday |
| 26 | Wednesday | Mid-semester grades 12 M. |
| 28 | Friday | Spring recess begins at 10 a.m. |
| Apr. 8 | Tuesday | Classes resume at 8 a.m. |
| 24 | Thursday | Honors Convocation |
| May 8 | Thursday | Moving-Up Day—no classes after 10 a.m. |
| 9-10 | Friday Saturday | Parents' Weekend |
| 22-23 | Thursday Friday | Study Days |
| 24 | Saturday | Final examinations begin |
| June 3 | Tuesday | Final examinations and second semester end |
| 8 | Sunday | Commencement |

SUMMER SESSIONS 1969

| | |
|----------------|-----------------|
| June 9-27 | Interession |
| June 30-Aug. 8 | Regular Session |
| Aug. 11-29 | Postsession |

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