Master of Fine Arts

The Program
The objective of the Master of Fine Arts degree is to prepare individuals for careers in ceramic art, electronic integrated arts, glass art, or sculpture.

This two-year program is highly competitive; only eight ceramic art, four electronic integrated arts, two glass art and three sculpture students are admitted annually. Each accepted M.F.A. candidate is given a financial stipend, either as a teaching assistant or as an intern, within the Art and Design program.

In addition to studio work, all graduate students take a series of seminars, art history, elective credits and technical classes relevant to their area of study.

In the final year, students write a thesis report and present a M.F.A. exhibition in the School of Art and Design’s Fosdick-Nelson Gallery or an approved alternate site.

Application
Applicants for admission should hold the baccalaureate degree with the equivalent of sixty credit hours in studio courses. A portfolio of completed works could be considered the equivalent of some studio courses.

In addition to the transcripts and letters of recommendation required of all students, applicants to the MFA program must present a portfolio showing preparation in the appropriate areas. Applicants to the Ceramic Art program must submit (20) twenty 35 mm slides. Applicants to the Electronic Integrated Arts program may submit slides, CD-ROMS, DVDs or cued videotapes. Applicants to the Sculpture/Dimensional Studies program may submit slides, CD-ROMS or DVDs. All work should be clearly labeled. Slides should be placed in 9” x 11” clear plastic sheets for safe handling and easy return. Each slide must indicate name of artist, date of work, top of slide, medium and dimensions in inches. A self-addressed, postage paid envelope must be included with the application to insure the return of the portfolio. Although every effort is made to return portfolios, the school is not responsible for missing materials.

The School of Art and Design of the New York State College of Ceramics at Alfred University offers graduate study in three divisional areas: Ceramic Art, Electronic Integrated Arts and Sculpture/Dimensional Studies (concentration in either sculpture or glass art). Applicants should make clear to which M.F.A. program they are applying.

Ceramic Art
Applicants to the Ceramic Art program must indicate a commitment to working with ceramic materials - clay, glaze, fire, etc. The program is open to work in all aspects of ceramic art including functional pottery, vessel ceramics, architectural ceramics, ceramic sculpture and installation.

Electronic Integrated Arts
The M.F.A. in Electronic Integrated Arts is an interdisciplinary approach to electronic and digital processes. It provides a context in which to explore the relationships between the languages, processes, and forms of emerging electronic/digital technologies with those of painting, printmaking, photography, design, video, and sonic arts.
Degree Programs

This program is designed to recognize an emerging population of students who are committed to investigating these relationships through work that is not necessarily confined to a singular artistic discipline.

Given this cross-disciplinary structure, student work can be based in any of the mediums included within the Division of Expanded Media and the Division of Painting and Photography, but should demonstrate an involvement with or integration of digital or electronic processes.

Sculpture/Dimensional Studies

Concentration in Glass Art
Applicants to the Glass Art program will have made a commitment to working with glass as a medium for artistic expression.

Concentration in Sculpture
Applicants to the Sculpture program will have made a commitment to the making of sculpture with or without media specificity.

It is important to be clear which program you want to enter, as portfolios must be reviewed by the appropriate selection committee.

All applications are made through the Graduate Admissions Office and all supporting documents and the portfolio should be submitted before the first of February of each year in order to be considered complete. Only completed applications will be sent to the Admissions Committee after February 1. Applications will be submitted to the appropriate selection committees for review. Enrollment is limited by facilities in the areas of concentration.

Those accepted must make a $200 deposit and return a signed contract within 15 days after notification of acceptance, or acceptance becomes void. No applications for January admission are considered.

Financial Support

Each M.F.A. student is assigned either a Graduate Assistantship or a Graduate Teaching Internship. In either case, the student receives a grant for full tuition and a stipend of $4,750 for the academic year.

Teaching Assistants help faculty members in the performance of their academic duties. Each Graduate Teaching Intern teaches one four credit hour studio course per semester. All assistants and interns have a commitment of 10 hours/week to meet the requirements of the stipend. Assignments are made in consultation among faculty, students and division chairpersons at the beginning of each semester.

Degree Requirements

Degree requirements include two years of residence and a minimum of sixty graduate credit hours. Reviews of work take place at the mid-term and end of each semester.

First-Year Requirements – Ceramic Art

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics Studio</td>
<td>16-20</td>
</tr>
<tr>
<td>Glaze Calculation (Fall)</td>
<td>2</td>
</tr>
<tr>
<td>Raw Materials (Spring)</td>
<td>2</td>
</tr>
<tr>
<td>Art History (Ceramic)</td>
<td>4</td>
</tr>
<tr>
<td>Topics in Ceramic Art</td>
<td>2</td>
</tr>
<tr>
<td>First Year Graduate Seminar</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>0-4</td>
</tr>
</tbody>
</table>
First-Year Requirements – Electronic Integrated Arts
Advanced Electronic Arts 8
Work and Analysis 8
Art History/Criticism 4
Electronic Strategies (non-time based) 4
Electronic Strategies (time based) 4
First Year Graduate Seminar 2
Electives 0-4

First-Year Requirements – Sculpture/Dimensional Studies
Concentration in Glass Art
Glass Studio 16-20
History of Art 4
Studio Practice 2
First Year Graduate Seminar 2
Electives 0-4
Concentration in Sculpture
Sculpture 16-20
History of Art 4
Studio Practice 2
First Year Graduate Seminar 2
Electives 0-4

The theoretical and creative studies of the first graduate year are so correlated as to provide the experience needed to identify and define the objectives of the second year.

The second year centers on the development of a body of work to be presented at the end of the year in a thesis exhibition. This exhibition must be accompanied by a written thesis report, which articulates the student’s philosophical point of view.

The student’s graduate faculty make quarterly reviews of work done and in progress. Before the review of the thesis exhibition, the final draft of the thesis report/technical statement/exhibition statement must be presented to the student’s respective graduate committee. A representative collection of twenty 35mm original slides (Electronic Integrated Arts candidates may instead submit electronic documentation) of graduate work in all areas, with major emphasis on thesis exhibition, is due before graduation.

Overview of Required Courses

Ceramic Art
ART 501 Studio Elective* (outside major concentration) 4
ART 552 Advanced Ceramics* (credits per semester, 1st Year) 8-12
ART 555 Raw Materials 2
ART 556 Glaze Calculations 2
ART 560 Ceramics Graduate Seminar 2
ART 672 Written Thesis Preparation 4
ART 680 Thesis* (credits per semester, 2nd Year) 8-12
ARTH 563 History of World Ceramics 4
ARTH 660 First Year Graduate Seminar 2

Minimum Total Credit Hours Required for the Program 60
Degree Programs

Electronic Integrated Arts

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 501</td>
<td>Studio Elective* (outside major concentration)</td>
<td>8</td>
</tr>
<tr>
<td>ART 523</td>
<td>Work and Analysis</td>
<td>16</td>
</tr>
<tr>
<td>ART 524</td>
<td>Electronic Strategies (non-time based)</td>
<td>4</td>
</tr>
<tr>
<td>ART 525</td>
<td>Advanced Electronic Arts*</td>
<td>8</td>
</tr>
<tr>
<td>ART 526</td>
<td>Electronic Strategies (time based)</td>
<td>4</td>
</tr>
<tr>
<td>ART 671</td>
<td>Written Thesis Preparation-EIA</td>
<td>4</td>
</tr>
<tr>
<td>ART 681</td>
<td>Thesis*</td>
<td>8</td>
</tr>
<tr>
<td>ARTH 660</td>
<td>First Year Graduate Seminar</td>
<td>2</td>
</tr>
<tr>
<td>ARTH</td>
<td>minimum one Art History/Criticism course</td>
<td>4</td>
</tr>
</tbody>
</table>

Minimum Total Credit Hours Required for the Program 60

Sculpture/Dimensional Studies

Concentration in Glass Art

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 501</td>
<td>Studio Elective*</td>
<td>8</td>
</tr>
<tr>
<td>ART 529</td>
<td>Studio Practice</td>
<td>6</td>
</tr>
<tr>
<td>ART 565</td>
<td>Advanced Glass*</td>
<td>8-12</td>
</tr>
<tr>
<td>ART 672</td>
<td>Written Thesis Preparation</td>
<td>4</td>
</tr>
<tr>
<td>ART 682</td>
<td>Thesis*</td>
<td>8-12</td>
</tr>
<tr>
<td>ARTH 561</td>
<td>History of Sculpture</td>
<td>4</td>
</tr>
<tr>
<td>ARTH 660</td>
<td>First Year Graduate Seminar</td>
<td>2</td>
</tr>
<tr>
<td>ARTH</td>
<td>minimum one additional Art History/Criticism course</td>
<td>4</td>
</tr>
</tbody>
</table>

Minimum Total Credit Hours Required for the Program 60

Concentration in Sculpture

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 501</td>
<td>Studio Elective*</td>
<td>8</td>
</tr>
<tr>
<td>ART 522</td>
<td>Advanced Sculpture*</td>
<td>8-12</td>
</tr>
<tr>
<td>ART 529</td>
<td>Studio Practice</td>
<td>6</td>
</tr>
<tr>
<td>ART 672</td>
<td>Written Thesis Preparation</td>
<td>4</td>
</tr>
<tr>
<td>ART 682</td>
<td>Thesis*</td>
<td>8-12</td>
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<td>ARTH</td>
<td>minimum one additional Art History/Criticism course</td>
<td>4</td>
</tr>
</tbody>
</table>

Minimum Total Credit Hours Required for the Program 60

*A materials fee, usually ranging from $11-$88 per credit hour, is charged for these courses

Master of Business Administration

The Alfred University M.B.A. is designed to prepare managers for the changing work environment of the 21st century. The program emphasizes development of leadership skills in an applied program utilizing teams, casework, and simulations. It is based upon the fundamentals of business knowledge known as the foundation classes. This is followed by an integrated, cross-disciplinary core, which reflects the current and emerging trends in management. Finally, students select four elective classes to complete their program.

M.B.A. coursework has three components: foundation, integrated core, and electives. Foundation courses feature fundamentals of business knowledge that can be completed at the undergraduate level prior to starting the program or as part of the program. The program requires a total of 61 credit hours for an individual without any foundation courses. For those with all foundation courses, the program can be completed in a minimum of 30 credit hours.
The integrated cross-disciplinary core reflects the current and emerging trends in management. Core courses have a balance of qualitative and quantitative course work to prepare students for effective leadership and management.

In addition to the required core, students must complete four electives as part of the program. Elective courses are designed to help students explore particular facets of business with an emphasis on strategic management.

**Foundation**
The foundation classes introduce the functional areas of business practice. These classes are satisfied at the undergraduate level:

- **ACCT 211 Financial Accounting** 3
- **ACCT 212 Managerial Accounting** 3
- **BUSI 113 Business Statistics** 3
- **BUSI 261 Operations Research** 3
- **ECON 201 Introduction to Economics and Markets** 4
- **ECON 202 Principles of Macroeconomics** 3
- **FIN 348 Managerial Finance** 3
- **MGMT 328 Management and Organizational Behavior** 3
- **MIS 101 Business Perspectives** 3
- **MKTG 221 Marketing Principles and Management** 3

**Total credit hours** 31

**Integrated Core**

- **MBA 610 Leadership Dynamics** 3
- **MBA 612 Legal, Political, and Social Environment of Business** 3
- **MBA 614 Financial Decision Making** 3
- **MBA 620 Global Dimensions of Management** 3
- **MBA 622 Quality Information Systems** 3
- **MBA 624 Strategic Management Simulation** 3

**Total credit hours** 18

**M.B.A. Electives**

Students may choose courses from the functional areas of business within the Business College. The M.B.A. Program Director must approve all electives.

**Total credit hours** 12

Electives include but are not limited to the following:

- **MBA 640 American Economic History** 3
- **MBA 642 Portfolio Management: Personal and Corporate Planning** 3
- **MBA 644 Accounting Issues** 3
- **MBA 646 Enterprise Resource Planning** 3
- **MBA 648 Business Warehouse** 3
- **MBA 660 Seminar in Business Issues** 3

**Full and Part-Time Study**

Students may attend the M.B.A. program on a part-time or full-time basis. The program is designed so that full-time students who need 30 credits can complete their course of study in less than one calendar year. A typical schedule for such a full-time student would be as follows:

**Fall Semester**

- **MBA core** 3
- **MBA core** 3
- **MBA core** 3
- **MBA elective** 3
Full-time students whose program requires more than the 30 credit hours would require more time, depending on their specific situation.

Part-time students can finish a 30 credit-hour program in a minimum of two years. Classes are offered in the late afternoon and early evening and students can reasonably plan to take a maximum of six credit hours per semester plus six credit hours in the summer. Part-time students whose program of study requires more than 30 credit hours will need more time to complete the degree. Students may begin part-time study without formal application to the program. A total of 9 credit hours may be completed on this basis.

Admissions
Admission to the program for both part and full-time students entails the following:
1. Official undergraduate transcripts.
2. Two letters of recommendation from either employers or college professors, whichever is appropriate. Forms are available through the Office of Graduate Admissions, or on-line, for your convenience.
3. Graduate Management Admissions Test. Applicants to the M.B.A. degree program must submit an official GMAT score.
4. Personal Statement
5. Submit application and above items to:
   Office of Graduate Admissions
   Alumni Hall
   1 Saxon Drive
   Alfred, NY 14802
   (607) 871-2141

Assistantships
A limited number of assistantships are granted annually to full-time students. These take the form of assistantships that provide for remission of approximately one-half the annual graduate tuition. Graduate assistants work 7.5 hours per week with a graduate faculty member in their area of interest. These are renewable.

Career Services
The University Career Development Center (CDC) works closely with MBA students both during and after graduation to secure employment in their chosen field. The CDC provides individual career assistance such as resume and cover letter writing, electronic job searching, effective interviewing, and how to survive the first year of one's first job.

Financial Aid
Financial aid is available. Students should contact the Financial Aid office at (607) 871-2159 for more information.
Facilities
The College of Business was established at Alfred University in 1973 and has been accredited by AACSB since 1987. The M.B.A. degree program is accredited by the Association to Advance Collegiate Schools of Business (AACSB) - International. The College is located in the F.W. Olin Building, a 5.6 million dollar facility providing classroom computer facilities and a trading room which are among the finest available.

Community Services Administration

Master of Professional Studies
The Community Services Administration program is designed for persons interested in the management, administration, design and implementation of services in public, quasi-public and private agencies in law enforcement, probation, youth corrections, community planning and development, programs for the aging, housing, public health, hospital administration, county administration, social counseling and other social services. The focus of the program is on developing an understanding of social policy issues, an appreciation for organizational behavior and an ability to utilize effective management techniques.

The CSA program enrolls both full-time and part-time students. The latter students are often employed in community service agencies, and the university provides flexible course scheduling to assist them in completing the program. Students who have attended both full and part time have found that the M.P.S. degree has led to career advancement and mobility.

The Program
The CSA program is a 30-33 credit hour program* consisting of six core courses required of all students and four elective courses which allow the student to choose an area of specialization. After completion of the required core courses, each candidate must pass a comprehensive oral examination.

Full-time students can expect to complete the program in one year.

The core courses are designed specifically to relate to the needs of those intending to serve in administrative and managerial roles in human services oriented agencies.

Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSAD 511</td>
<td>Interpersonal and Group Processes</td>
<td>3</td>
</tr>
<tr>
<td>CSAD 531</td>
<td>Political Environment of Community Services</td>
<td>3</td>
</tr>
<tr>
<td>CSAD 541</td>
<td>Basic Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>CSAD 561</td>
<td>Organizational Processes</td>
<td>3</td>
</tr>
<tr>
<td>CSAD 571</td>
<td>Agency Management</td>
<td>3</td>
</tr>
<tr>
<td>CSAD 581</td>
<td>Human Resources Administration</td>
<td>3</td>
</tr>
<tr>
<td>CSAD 590*</td>
<td>Fieldwork in Community Services</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours for Core  18-21

*For those without employment background or experience in a community service agency, fieldwork in a local agency is required. For these individuals a total of 33 credit hours are needed in the program. The fieldwork experience provides practical experience in a government or non-profit agency in accordance with individual interests and needs.
48  Degree Programs

Program Electives

Elective courses in the Community Services Administration program may be selected from a variety of disciplines. The student, in consultation with his/her advisor, will tailor the elective courses to a particular area of interest. Examples of the areas of specialization that may be developed are policy analysis, counseling, management, aging, education, and social research.

Electives designed specifically for the program:
- CSAD 515 Managerial Communication Skills 3
- CSAD 526 Financing State and Local Governments 3
- CSAD 534 Political and Legal Environment of New York State 3
- CSAD 565 Computer Applications for CSA 3
- CSAD 566 Management Information Systems 3
- CSAD 573 Program Implementation 3
- CSAD 575 Grants for Public and Non-Profit Organizations 3

Total Credit Hours for Electives 12

Total Credit Hours Required for Program: 30-33

Counseling and School Psychology

The Division of School Psychology offers graduate programs to prepare candidates to become mental health professionals working in schools, community agencies, and higher education. Three degree programs are available:

Master of Science in Education/Certificate of Advanced Study in Counseling
Master of Arts/Certificate of Advanced Study in School Psychology
Doctor of Psychology in School Psychology

Counseling Program

Overview
The Graduate Counseling Program in the Division of School Psychology is designed to meet the course work and field experiences requirements outlined in the accreditation standards of the Council for Accreditation of Counseling and Related Educational Programs (CACREP) and the National Council for Accreditation of Teacher Education (NCATE), and the requirements for becoming a Licensed Mental Health Counselor in New York State. The school counseling specialization also meets the course work and field experiences required by the New York State Department of Education for provisional certification as a school counselor.

The Graduate Program in Counseling is designed to train students to make appropriate and ethical decisions as counseling professionals. The most important of these decisions is the selection of strategies that empower clients to make personal decisions leading to the resolution of problems and resulting in an improved quality of life. Therefore admission is based on undergraduate achievement, and demonstration of high levels of maturity, flexibility, and self-understanding.

Mission Statement
Alfred University’s graduate program in counseling prepares individuals for counseling positions in elementary, middle and high schools, colleges and universities, mental health centers and social service agencies. Students acquire core knowledge and clinical skills that enable them to enter the profession of counseling.
We (the faculty) strive to create a rigorous scholarly and supportive atmosphere for students to develop intellectually with a deep sense of social consciousness and self-awareness. We value teaching, scholarship, and service, which contribute to the mission of Alfred University.

**Goals and Objectives of the MSED/CAS Program in Counseling**

**Goal A:** To produce counselors with the personal qualities, interpersonal skills and awareness, and the ethical sensitivity predictive of success in a broad array of social, economic, and political contexts.

  - **Objective A1:** Students will develop an understanding of service delivery programs within a context respectful and appreciative of individual, family, and cultural diversity.
  - **Objective A2:** Students will develop an awareness that their personal characteristics and interpersonal skills affect the quality, social validity, and acceptability of the services they provide.
  - **Objective A3:** Students will abide by ethical standards as they relate to the historical foundations of the counseling profession and the current guidelines for practice.

**Goal B:** To produce counselors competent to access a broad range of theoretical and practical approaches with sufficient depth to be effective, flexible practitioners.

  - **Objective B1:** Students will develop proficiency in understanding of the characteristics and needs of individuals at all developmental levels, as well as understanding of adaptive and maladaptive behaviors.
  - **Objective B2:** Students will develop proficiency in the counseling and consultation processes to develop programs to intervene both directly and indirectly with client’s academic, behavioral, and emotional problems.

**Goal C:** To produce counselors who have an understanding of group development, dynamics, differing theoretical approaches to group work, group leadership skills and strategies.

  - **Objective C1:** Students will develop an understanding of career development and related life factors.
  - **Objective C2:** Students will apply knowledge of research methods, basic statistics, and ethical and legal considerations to the counseling process.
  - **Objective C3:** Students will develop an understanding of all aspects of the counseling profession and professional functioning including history, organizational structures, counselor role and function, ethics, standards, and credentialing.
  - **Objective C4:** Students will specialize in the areas of school counseling, community-agency counseling, and higher education (college/university student development).

**Goal D:** To produce counselors competent in the comprehension and application of concepts, models and techniques to professional practice.

  - **Objective D1:** Students will complete practicum and internship experiences that provide quality supervision in order to assure that they obtain adequate experience with clients in their chosen specialization area. This knowledge base will include the updated and appropriate use of information technology in their placements.
  - **Objective D2:** Students will engage in personal growth experiences that will allow them to assess their personal characteristics, skills and their readiness to enter the counseling field.
  - **Objective D3:** Students will be presented with opportunities to engage in research activities on their own or with faculty.
Degree Programs

The Curriculum
Alfred University’s program consists of a 50 credit hour program in Counseling leading to the Master of Science in Education degree and a 12 credit hour Certificate of Advanced Study degree. Both degrees are awarded after the completion of the internship. Within this 62 credit program students may specialize in school counseling, community/agency counseling, or college student development. Students specializing in school counseling will receive provisional certification as a New York State school counselor upon completion of the program. All program graduates will have fulfilled the educational requirements to become a Licensed Mental Health Counselor (LMHC) in New York State. Additional supervised work experience is required post-graduation for the LMHC.

The program admits students for the fall semester, and full-time students are continuously enrolled for two academic years. The degree can also be completed on a part-time basis. The final semester (internship) must be completed on a full-time basis. Satisfactory performance and development during the first two semesters as well as success on a qualifying examination are required for admission to the third semester of the program. The course sequence for a full-time student follows:

First Semester
COUN 601 Foundations of Cultural Diversity 1
COUN 602 The Profession of Counseling 3
COUN 606 Human Development: The Lifespan 3
COUN 636 Principles of Counseling 3
COUN 637 Group Dynamics 1
COUN 656 Counseling Pre-Practicum 1
Semester Total Credit Hours 15

Second Semester
COUN 605 Career Development and Life Planning 3
COUN 638 Advanced Counseling Theory and Practice 3
COUN 642 Multi-cultural Counseling 3
COUN 657 Practicum in Counseling I 2
Contemporary Issues Specialization Course: 3
COUN 603 Issues in Agency Counseling
or COUN 604 Issues in School Counseling
or COUN 607 Issues in College Student Development
Exceptionality Specialization Course: 3
COUN 616 Mental Health, Exceptionality, and Disability
or COUN 617 College Students with Disabilities
Semester Total Credit Hours 17

Third Semester Courses
COUN 639 Group Counseling 3
COUN 658 Practicum in Counseling II 3
COUN 671 Research and Statistics I 3
And two additional courses, which vary depending on Specialization:
School Specialization Requirement: 6
PSYC 641 Introduction to Family Therapy
PSYC 646 Consultation and Prevention
Agency Specialization Requirement: 6
PSYC 641 Introduction to Family Therapy
PSYC 646 Consultation and Prevention
or COUN 619 Program Development and Grantsmanship
### Degree Programs

**College Student Development Requirement:** 6

COUN 618 Administration of College Student Development Services  
COUN 619 Program Development and Grantsmanship

**Semester Total Credit Hours** 15

### Fourth Semester Courses

**Internship:** 12

- COUN 667 Internship in Agency Counseling  
- or COUN 668 Internship in School Counseling  
- or COUN 669 Internship in College Student Development  

COUN 695 Topics in Counseling/Internship Seminar 3

**Semester Total Credit Hours** 15

**Total Credit Hours Required for the Program:** 62

### Undergraduate Preparation for the MSED/CAS Program in Counseling

It is preferred that students present evidence of successful completion of some undergraduate course work in the following subject areas: Psychology, sociology, education, or human development. However, it is more important that students demonstrate academic success in their undergraduate work, no matter what they majored in. No program credit is given for undergraduate study. Practical experiences are seen as valuable preparation, but cannot substitute for supervised graduate level practicum experiences.

All Counseling Program courses (unless otherwise noted) are open only to graduate students who are matriculated in the Counseling Program. In addition, some school psychology courses are available with permission of the instructor and division chair to matriculated graduate students in the Alfred University counseling programs. Up to 6 hours of graduate credit may be transferred to the master’s degree.

### Admission

Students applying to the Counseling Program must submit the following documents directly to the Graduate Admissions Office:

- a completed application form;  
- three (3) letters of recommendation;  
- official transcripts of all undergraduate and graduate coursework;  
- Graduate Record Examination (GRE) results-General Test;  
- a personal statement of objectives; and

Admission to the M.S.Ed./C.A.S. Counseling Program is limited to 18 students each year. Review of applications will begin on February 15. Late applications will be considered if places in the class still exist for qualified applicants. Early application is strongly encouraged.

### Interview

An on-campus interview is expected of each applicant for admission to the program, but warranted exceptions may be made. Correspondence about the program should be addressed to Dr. John Cerio, Division of School Psychology, Alfred University, 1 Saxon Drive, Alfred, NY 14802. Telephone (607) 871-2212; e-mail: fcerio@alfred.edu
Degree Programs

The M.A./C.A.S. Program in School Psychology

Overview
Alfred University offers a National Association of School Psychologists (NASP) approved program of graduate study in School Psychology consisting of two years of full-time graduate study followed by a full year internship. The Master’s degree is conferred following completion of 61 credit hours of coursework, and the Certificate of Advanced Study is awarded upon completion of the 18 credits of full-time internship. These degree requirements satisfy the academic portion of the New York State Education Department requirements for the permanent certificate as a school psychologist. Graduates also fulfill the academic requirements for National Certification as a School Psychologist (NCSP), an additional credential offered by the National Association of School Psychologists. All students are required to take the School Psychology examination offered by the Educational Testing Service/Praxis Exam Series prior to completion of the internship.

The School Psychology Program is designed to develop professional psychologists who possess the personal characteristics and academic competencies necessary for serving the mental health and educational needs of all children and youth. Because of the applied nature of the program and the close interpersonal relationships that the profession of school psychology demands, students applying for admission must demonstrate a high level of maturity, independence, and flexibility.

Mission of the MA/CAS Program
Preparation of psychologists for applied professional practice in schools and other child and family-oriented settings.

Goals and Objectives of the MA/CAS Program

Goal A: To produce school psychologists with the personal qualities, interpersonal skills and awareness, and the ethical sensitivity predictive of success in a broad array of social, economic, and political contexts.

Objective A1: Students will develop an understanding of service delivery programs within a context respectful and appreciative of individual, family, and cultural diversity.

Objective A2: Students will develop an awareness that their personal characteristics and interpersonal skills affect the quality, social validity, and acceptability of the services they provide.

Objective A3: Students will abide by ethical standards as they relate to the historical foundations of the school psychology profession and the current guidelines for practice.

Goal B: To produce school psychologists competent to access a broad range of theoretical and practical approaches with sufficient depth to be effective, flexible practitioners.

Objective B1: Students will develop proficiency in data-based decision-making, including traditional and alternative approaches to the assessment and evaluation of children’s academic, behavioral and emotional problems.

Objective B2: Students will develop proficiency in the design and development of programs to intervene both directly and indirectly with children’s academic, behavioral, and emotional problems. These programs will include academic strategies, behavior modification, crisis intervention, and counseling techniques.

Goal C: To produce school psychologists who have an understanding of the basic principles of human cognitive and emotional development and their relationship to the functioning of children within a school setting.
Objective C1: Students will develop an understanding of the development of both normal and exceptional children.

Objective C2: Students will gain knowledge of general and special education services and legal guidelines, as part of understanding the educational and socio-political climate of their school districts.

Objective C3: Students will develop skills in consulting and communicating with school professionals and parents, as part of their role in the prevention and remediation of academic and emotional problems in children.

Goal D: To produce school psychologists competent in the comprehension and application of research to professional practice.

Objective D1: Students will acquire a foundation in the scientific knowledge base of psychology and education, as well as an ability to evaluate and utilize research in their practice.

Objective D2: Students will develop proficiency in ongoing program evaluation, so they make informed decisions based upon objective data in developing services for children. This knowledge base will include the updated and appropriate use of information technology in their practice.

Curriculum

The program of study emphasizes a base of training in school psychology with special concern for the application of psychological knowledge in a variety of settings. Training in the following competency areas is provided: knowledge base in psychology and education; assessment; direct and indirect intervention; program development and evaluation; family systems; and professional role and functioning.

Students participate in supervised fieldwork experiences and practica from the first semester on. Students gain experience in local public schools as well as in the on-campus Child and Family Services Center. The culminating experience consists of a full-time, supervised yearlong internship in a public school system in New York State. Normally, the student is paid a stipend by the public school in which he/she interns, covering tuition for that year.

Satisfactory performance and development during the first two semesters as well as success on a qualifying examination are required for admission to the third semester of the program.

The following courses are required for all students in the MA/CAS Program:

**First Semester**
- PSYC 601 Foundations of Cultural Diversity 1
- PSYC 603 Foundations of School Psychology 3
- PSYC 626 Psychological and Educational Measurements 2
- PSYC 627 Norm-Referenced Testing I 2
- PSYC 628 Academic Functioning 2
- PSYC 636 Foundations of Interpersonal Effectiveness 3
- PSYC 637 Introduction to Group Dynamics 1
- PSYC 656 Field Experience in School Psychology I 1

**Semester Total Credit Hours** 15

**Second Semester**
- PSYC 629 Social-Emotional Assessment 3
- PSYC 632 Norm-Referenced Testing II 2
- PSYC 638 Psychotherapy and Behavior Change 3
Degree Programs

PSYC 639   Exceptionality in Learning and Behavior  3
PSYC 651   Academic Interventions  3
PSYC 657   Field Experience in School Psychology II  2

Semester Total Credit Hours  16

Third Semester
PSYC 607   Learning and Cognition  3
PSYC 641   Introduction to Family Therapy  3
PSYC 646   Consultation and Prevention  3
PSYC 658   Clinic Practicum I  3
PSYC 671   Statistical Analysis and Research Design I  3

Semester Total Credit Hours  15

Fourth Semester
PSYC 606   Advanced Developmental Psychology  3
PSYC 609   Physical Bases of Behavior  3
PSYC 642   Clinical Seminar: Advanced Topics in School Psychology  3
PSYC 659   Clinic Practicum II  3
PSYC 695   Professional Practice Seminar  3

Semester Total Credit Hours  15

Fifth Semester
PSYC 667   Internship in School Psychology I  9

Sixth Semester
PSYC 668   Internship in School Psychology II  9

Total Credit Hours Required for the Program  79

Undergraduate Preparation and Admission to the MA/CAS Program
(see below)

The Doctor of Psychology Degree Program

Overview
The Doctor of Psychology Degree program in School Psychology is designed to prepare psychologists who will practice advanced skills in the schools and related child and family settings and to prepare graduates to meet professional employment demands for:
1. Psychologists in applied research;
2. Supervising psychologists;
3. Psychologists in child and family treatment agencies, hospitals, and private practice; and
4. Professionals in higher education involved in the training of educators and clinicians. The program leads to New York State license eligibility as a psychologist as well as state and national certification as a school psychologist.

Doctoral training focuses on applied research skills, advanced studies, and expanded areas of expertise. Graduates will possess the flexibility to assume a variety of roles and have the necessary skills to aid in the continuous development through research and practice of more effective educational and psychological practices. They acquire a broad knowledge base in psychological and educational theory, research and practice.
They develop competencies in basic skill areas, advanced assessment, direct and indirect intervention including counseling and consultation with individuals, groups and systems, applied research, and supervision of others providing psychological services to children and families, particularly within a rural context.

Doctoral candidates are also encouraged to develop a specific area of expertise through a concentration of coursework, field experience and research. This focus on a strong professionally oriented program logically leads to the Psy.D. versus the Ph.D. degree and is in concert with the view put forth in the final report of the Psychology Committee of the Doctoral Evaluation Project of the New York State Education Department.

Mission of the Psy.D. Program
Preparation of psychologists for applied professional practice in schools and other child and family oriented settings.

Goals and Objectives of the Psy.D. Program
Goal A: Produce professional psychologists with the personal qualities, interpersonal skills and awareness, and the ethical sensitivity predictive of success in a broad array of social, economic, and political contexts.

Objective A1: Students will develop an understanding of service delivery programs within a context respectful and appreciative of individual and cultural diversity, especially the diversity inherent in rural, impoverished populations.

Objective A2: Students will develop an awareness that their personal characteristics and interpersonal skills affect the quality, social validity, and acceptability of the services they provide.

Goal B: To produce psychologists competent to access a broad range of theoretical and practical approaches with sufficient depth to be effective, flexible practitioners.

Objective B1: Students will develop proficiency in traditional and emerging approaches to the assessment and evaluation of children’s academic, behavioral, and emotional problems.

Objective B2: Students will develop proficiency in the design and development of programs to intervene both directly and indirectly with children’s academic, behavioral, and emotional problems.

Goal C: Produce professional psychologists competent in the conduct, comprehension, and application of research to professional practice.

Objective C1: Students will acquire a foundation in the scientific knowledge base of psychology and education as well as an appreciation for the interactive complementarily of research and practice.

Objective C2: Students will develop proficiency in the conducting and disseminating research related to professional practice.

Curriculum
A total of 114 credit hours are needed to complete the program. A minimum of 81 credits of coursework beyond the baccalaureate degree must be completed in addition to one year of internship (18 credits) and a minimum of 12 credits of dissertation. As specified by University regulations, all work for the degree must be completed within 7 years from the date of the start of the program. Every student must fulfill a residency requirement, which requires the student to be registered for courses as a full-time student for two consecutive semesters. Thus, this is a four-year program at the minimum, with three years of coursework, one year of supervised internship experience and research, with at least one year of full-time residency. The content of the coursework is a balance of scientific bases, and academic and professional applied psychology.
Students are encouraged to develop a specialty through a combination of coursework, practica, and/or research in a particular area. All students must pass master’s level written qualifying examinations, engage in a research apprenticeship, participate in practica and complete an internship. In addition, a doctoral qualifying examination and a dissertation are required.

**Sample Sequence of Courses for a Full-Time Student’s Program**

The first four semesters are identical to the curriculum for the M.A./C.A.S. program, with the exception that doctoral students take PSYC 672 - Statistical Analysis and Research Design II, during the fourth semester:

<table>
<thead>
<tr>
<th>Years 1 and 2:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>MA coursework</strong></td>
<td>61</td>
</tr>
<tr>
<td>PSYC 672 Statistical Analysis and Research Design II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Years 1 and 2 Total Credit Hours</strong></td>
<td><strong>64</strong></td>
</tr>
</tbody>
</table>

Beyond the first two years doctoral students enroll for the following:

<table>
<thead>
<tr>
<th>Year 3:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fifth Semester</strong></td>
</tr>
<tr>
<td>PSYC 673 Statistical Analysis and Research Design III</td>
</tr>
<tr>
<td>PSYC 674 Research in School Psychology</td>
</tr>
<tr>
<td>PSYC 692 Supervision and Administration of Psychological Services</td>
</tr>
<tr>
<td>PSYC 699 Dissertation</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td><strong>Semester Total Credit Hours</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seventh Semester</strong></td>
</tr>
<tr>
<td>PSYC 667 Internship in School Psychology I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 5:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ninth Semester</strong></td>
</tr>
<tr>
<td>PSYC 699 Dissertation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tenth Semester</th>
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</thead>
<tbody>
<tr>
<td>PSYC 699 Dissertation</td>
</tr>
</tbody>
</table>

**Minimum Total Credit Hours Required for the Program:** 120

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1This sample program illustrates the more typical case of a student requiring five years to complete the degree.
Undergraduate Preparation for the M.A., C.A.S., and Psy.D. Programs
The student must present evidence of competence in the following subject areas:
1. introduction to psychology;
2. statistical and/or experimental methods; and
3. at least one of the following:
   • developmental psychology (e.g., child and adolescent psychology);
   • personality; or
   • abnormal psychology.

Students who have not taken these courses, but who are acceptable candidates otherwise, may make arrangements upon approval of the School Psychology Committee, to satisfy these requirements via coursework or independent study in the summer preceding admission. Other courses, such as tests and measurements, learning or educational psychology are looked upon favorably. Practical experiences in psychology or education as well as any other relevant experiences are seen as valuable preparation. No more than 6 graduate semester credit hours may be transferred to the master’s degree. Students who enter the doctoral program with advanced standing (a master’s degree in the field) must complete at least 50% of their credits for doctoral coursework at Alfred University.

Admission
Students applying to the School Psychology Program must submit the following documents directly to the Graduate Admissions Office:
• a completed application form;
• three (3) letters of recommendation;
• official transcripts of all undergraduate and graduate coursework;
• Graduate Record Examination (GRE) results-General Test;
• a personal statement of objectives; and
• a statement of research interest (Psy.D. only).

Admission to the M.A./C.A.S. School Psychology Program is limited to 18 students each year, and six students for the Psy.D. program. The deadline for applications to the Doctor of Psychology (Psy.D.) program in School Psychology is January 15. Review of applications for the M.A./C.A.S. program in School Psychology will begin on February 15. Late applications will be considered if places in the class still exist for qualified applicants. Early application is strongly encouraged.

Interview
An on-campus interview is expected of each applicant for admission to the program, but warranted exceptions may be made. Correspondence about the program should be addressed to Dr. Jan Atlas, Division of School Psychology, Alfred University, 1 Saxon Drive, Alfred, NY 14802. Telephone (607) 871-2212; e-mail: atlasj@alfred.edu.

Education
The Division of Education offers a program in the teaching of literacy leading to the Master of Science in Education (M.S.Ed.).

Initial Certification in Childhood or Adolescence Education
Students who have a bachelors or masters degree desiring initial or provisional certification in Childhood or Middle/Adolescence Education should contact their local BOCES certification officer to determine the required coursework. Two local BOCES are: Allegany County BOCES (716) 376-8374 and Steuben County BOCES (607) 281-2166.
After an initial consultation with the BOCES officer, a faculty member from Alfred University will work with individuals to insure that the requirements have been met for receiving initial certification through BOCES.

Mission and Objectives
The Education Division at Alfred University is guided by and agrees with the overall philosophical approach of the New York State Department of Education. Namely, that a teacher education program must prepare students who:

1. have a thorough knowledge of the New York State standards and have developed the pedagogical competencies to ensure that all students can meet these standards;
2. develop breadth of knowledge in the content areas consistent with these new New York State standards;
3. develop depth of knowledge in the content areas consistent with these new New York State standards;
4. develop strong communication modes in the areas of writing, listening and speaking; and use these to promote student learning in the classroom;
5. develop an understanding of the developmental stages of the learner; understanding of motivation, cognitive development, child or adolescent psychology, psychology of the exceptional child, diagnostic skills and remediation strategies;
6. develop an understanding of the social context of education and schools, including understanding of multicultural dimensions of schools and teaching and roles of the family in education;
7. develop training in effective classroom management techniques so as to create a safe and productive learning environment;
8. develop an understanding of motivational principles and multiple approaches to instruction and can facilitate active learning and student achievement in various situations, use diverse forms of technology; and
9. develop an understanding for the principles and procedures of an organization and implementation of lessons and how to help learners achieve intended objectives.

Literacy Teacher Program (Pre-Kindergarten – Grade 6)
Graduates of the Literacy program have completed the academic requirements for professional certification in all teaching areas, (including Early Childhood/Childhood, Art, and Middle and Adolescent subjects) regardless of the subject area of their initial certification.

Purpose of the Degree
The graduate program in literacy is designed to prepare master teachers of literacy as consultants, program coordinators, specialists and classroom teachers (Pre-K - grade 6). The program’s emphasis is placed on the practical application of current reading approaches and strategies, materials, methodologies, goal assessment, techniques, evaluation, and professional responsibilities of the literacy teacher. Upon completion of the program, the student is expected to demonstrate a thorough knowledge of both developmental and remedial literacy (Pre-K - grade 6).

Admission to the Literacy Program
Prior to entering the Literacy Program, applicants must have fulfilled all requirements for initial or provisional teacher certification and completed all three sections of the New York State teacher examinations, including the Content Specialty Tests (CST), and at least two letters of recommendation from professional sources. Applicants should send copies of these scores, along with official undergraduate transcripts and letters of recommendation to the Graduate Admissions office.
Degree Programs

Certification
The degree in Literacy meets the criteria for and may be used in partial fulfillment of the requirements for permanent and professional certification in New York. Additionally, students completing the Literacy Program fulfill the requirements for certification in Literacy (Pre-K - grade 6).

Required Courses
EDUC 503 Competency in the Teaching of Literacy  3
EDUC 504 Diagnostic and Remedial Techniques in Literacy  3
EDUC 505 Literacy in the Content Areas  3
EDUC 507 Literacy Seminar and Field Experience  6
EDUC 513 Literature for Children  3
SPED 556 Human Development: Exceptionality  3
EDUC 695 Master’s Project  3

Elective Courses
Select two of the following*:
EDUC 593 Use of Technology in the Classroom  3
SPED 545 Learning Disabilities  3
EDUC 542 The Teaching-Learning Process  3
*with advisor approval, other electives may be substituted

Total Credit Hours Required  30

Engineering and Science

There are six engineering and science programs leading to the conferral of the Master of Science degree:

- Biomedical Materials Engineering Science
- Ceramic Engineering
- Electrical Engineering
- Glass Science
- Materials Science & Engineering
- Mechanical Engineering

Biomedical Materials Engineering Science

Overview
Biomedical Materials Engineering Science (BMES) at Alfred University is an interdisciplinary program that focuses on both the intrinsic properties of biomaterials and the interaction between these nonliving biomaterials and the biological systems with which they must interact. Tailored ceramics, glass, metals, composites, and polymers are assuming greater importance for implants, drug delivery substrates, radioactive delivery vehicles for cancer therapy, substrates for cell culture, catalysts for biological reactions, immobilizers of harmful molecular species, materials for batteries, capacitors and other implant devices. In addition, biomolecule-materials composites with entirely new properties (e.g. biomimetics) will dramatically enlarge the field of biomaterials in the near future.

The BMES program at Alfred University seeks to educate a unique group of biomedical engineers whose focus is on materials and their interactions with cells and tissues. The program is designed to attract students from diverse backgrounds such as materials engineering, biotechnology, biomedical, and physical sciences who wish to study materials for medical applications.
Degree Programs

The curriculum and thesis-based research focuses on: (a) an understanding of the interaction/interface between nonliving materials and biological systems via fabrication, characterization, and simulation; (b) the development of novel biomaterials, including biomimetic, bioreactive, and combination systems that utilize both living and nonliving components, (c) identification of new ways in which standard and novel biomaterials may be used in the analysis, diagnosis, and treatment of diseases and injuries; and (d) the development of standardized testing procedures for assessing and predicting materials behavior in the biological environment.

Students completing the program are well prepared to enter the rapidly growing “biotech” industries where knowledge of both materials and molecular cell biology is rare. They are also prepared to enter industries that develop and manufacture medical devices, equipment and supplies including the design and production of classic biomedical implants such as cardiovascular stents and dental prosthetics. They will be qualified for a wide range of careers in the healthcare industries. A significant fraction of students may continue their education in professional schools of medicine or law, or pursue Ph.D. studies in related fields such as Materials Science or Biomedical Engineering.

Prerequisites and Undergraduate Preparation

The program is open to students holding Bachelor of Science degrees in materials engineering, biological, and physical sciences. Acceptance into the program is based on the applicant’s prior academic record, work experience, potential for growth, and the availability of space in the program. Ideally, applicants should present evidence of undergraduate-level competence in the following subject areas: 1) introductory cell biology, 2) organic chemistry, 3) thermal and mechanical properties of materials, and 4) single-variable calculus. Applicants without the required background will also be considered for admission, but may have to take prerequisite courses before enrolling specific graduate classes.

Curriculum

The Master of Science in BMES requires a minimum of thirty semester-hours of graduate credit, of which at least twenty-four must be in advanced coursework. Candidates for the degree are required (1) to present and defend a written thesis of their research and (2) to submit a manuscript suitable for publication in a peer-reviewed journal. The curriculum is designed to be completed in two years of full-time study.

Course Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 568</td>
<td>Biomedical Materials</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 569</td>
<td>Advanced Biomedical Materials Engineering</td>
<td>3</td>
</tr>
<tr>
<td>List A Technical Elective</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>List B Technical Elective</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>CEMS 680</td>
<td>Graduate Thesis</td>
<td>6</td>
</tr>
<tr>
<td>CEMS 660</td>
<td>Research Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CEMS 690</td>
<td>Graduate Seminar (mandatory each semester)</td>
<td>0</td>
</tr>
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</table>

Total Credit Hours Required for the Program 30

List A Technical Electives (Materials)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 505</td>
<td>Defects and Defect-related Process</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 513</td>
<td>Nano-Structured Materials</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 526</td>
<td>Surface Properties of Glass</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 533</td>
<td>Statistical Experimental Design</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 534</td>
<td>Polymer Characterization</td>
<td>3</td>
</tr>
</tbody>
</table>
List B Technical Electives (Molecular and Cell Biology)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 563</td>
<td>Advanced Cell Biology</td>
<td>4</td>
</tr>
<tr>
<td>CEMS 564</td>
<td>Biochemistry: Proteins and Metabolism</td>
<td>4</td>
</tr>
<tr>
<td>CEMS 565</td>
<td>Biochemistry: Nucleic Acids</td>
<td>4</td>
</tr>
</tbody>
</table>

Ceramic Engineering

Overview

Ceramic Engineering is concerned with developing and manufacturing ceramic products, materials, and processes. Often characterized as "high temperature chemistry," ceramic engineering relies heavily on chemistry and physics of the solid state to measure and control the composition, structure, properties and performance of oxide and non-oxide materials. Processing, beginning with mining and raw material preparation, and including forming, drying, firing, decorating and quality assurance, lies at the heart of ceramic materials development and manufacture.

Ceramic materials are used in a wide range of severe-use-condition applications where their unique chemical, thermal, optical, electrical, magnetic, and mechanical properties lead to superior performance in environments that other materials cannot survive. Refractory ceramics provide the thermal envelop for the manufacture of metals and glasses and for power generation, both conventional and nuclear. Magnetic ceramics power dozens of motors in aircraft, cars and trucks and home appliances. Arguably, the "computer revolution" depends on the electrical and, more recently, the optical properties of ceramic materials, including glass.

Ceramic products range from familiar products that we all use every day to very advanced products used in transportation, medicine, national defense, communications, and computing. Everyday products include ceramic floor, wall and roof tiles, dinnerware, sanitary ware (sometimes called after-dinnerware), electrical insulators for power transmission, cement and concrete for construction and transportation systems, glass products including flat glass (windows and architectural glasses), fiber glass insulation, TV glass for both the face and the "bulb" of TV tubes, and tableware. And the list goes on. Advanced ceramic products include glass fibers and active optical devices for communication, body armor for military and police, prosthetic devices for body part replacement, and high temperature materials for current and next-generation air and space crafts.

The M.S. Ceramic Engineering program at Alfred University seeks to provide students with practical, hands-on learning that is founded on the science of the solid state. Students gain experience using state-of-the-art processing, characterization, and property measurement equipment and instrumentation as tools aimed at solving real-world ceramic materials problems, often with industrial partners and mentors. While it is true that many of our M.S. Ceramic Engineering graduates go on to pursue Ph.D. and other advanced professional degrees, our program is primarily designed for the student who recognizes that study beyond an engineering B.S. degree will be of great benefit to employment and success in the ceramics industries.
**Degree Programs**

Graduates of the M.S. Ceramic Engineering program are well prepared for careers in the full range of ceramics industries, but thesis research will have focused attention and provided depth in a subset of opportunities of special interest to the student. Some graduates of the program continue their education by pursuing doctoral degrees in Ceramics and related technical fields, or in a broad range of professional degrees, including medicine, law, and business.

**Prerequisites and Undergraduate Preparation**

The program is open to qualified students holding Bachelor of Science degrees in an ABET accredited engineering program. Acceptance into the program is based on the applicant’s prior academic record, work experience, potential for growth, and the availability of space in the program. Ideally, applicants should present evidence of undergraduate-level competence in the following subject areas: 1) glass science, 2) ceramic processing, 3) thermal and mechanical properties of materials, and 4) electrical and optical properties of materials. Applicants without the required background will also be considered for admission, but may have to take pre-requisite courses before enrolling specific graduate classes.

**Curriculum**

The Master of Science in Ceramic Engineering requires a minimum of thirty semester-hours of graduate credit of which at least fifteen must be in advanced coursework.

The degree also requires a minimum of fourteen hours of thesis credit and a one-credit research seminar, which is taken during the first semester of graduate enrollment. Candidates for the degree are required (1) to present and defend a written thesis of their research and (2) to submit a manuscript suitable for publication in a peer-reviewed journal. The curriculum is designed to be completed in two years of full-time study.

**Course Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 510</td>
<td>Advanced Ceramic Processing</td>
<td>3</td>
</tr>
<tr>
<td>or CEMS 511</td>
<td>Science of Whitewares</td>
<td>3</td>
</tr>
<tr>
<td>Characterization Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>CEMS 660</td>
<td>Research Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CEMS 680</td>
<td>Graduate Thesis (14 credit minimum)</td>
<td>14</td>
</tr>
<tr>
<td>CEMS 690</td>
<td>Graduate Seminar (mandatory each semester)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Credit Hours Required for the Program</strong></td>
<td></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

**Characterization Elective**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 541</td>
<td>Advanced Crystallography</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 542</td>
<td>Advanced Optical Microscopy</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 543</td>
<td>Analytical Transmission Electron Microscopy</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 544</td>
<td>Structure and Characterization of Glasses</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 545</td>
<td>Characterization in Materials Science and Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

**Technical Electives**

A technical elective in Ceramic Engineering is any graduate-level course in the School of Engineering except CEMS 519. Graduate-level courses offered in Chemistry, Physics or Mathematics may be used as technical electives with written approval of the thesis advisory committee.
Degree Programs

Electrical Engineering

Overview

Electrical Engineering covers everything from power generation, transmission, distribution and utilization to microchip circuit design, control systems, communications systems, computer design, lasers, etc. Electrical engineering covers computers, controls, communication, power, and electronic materials. Graduates of the M.S. in E.E. program will pursue Ph.D., J.D., and M.D. degrees, or will enter the job market in the areas of electrical engineering, general engineering, management, research and development, teaching or other related profession.

The mission of the Electrical Engineering Graduate Program is to provide excellent learning opportunities for individual graduate students in our specialized areas, with a required research thesis or design project. At Alfred University, the Master of Science degree in Electrical Engineering seeks enable student to specialize in the following areas:

- Communication systems
- Control systems
- Computer systems and software
- Optoelectronic and solid-state devices
- Power systems and machinery
- Superconducting electronics and lasers
- Electromagnetic waves & high voltage devices

Graduates of the program are well prepared to work in research and development, technical sales, product design, manufacturing, or management, just to name a few.

Prerequisites and Undergraduate Preparation

The program is designed for individuals with a Bachelor of degree from an approved institution in a field of engineering or physics. Students with degrees from non-accredited engineering programs will also be considered for admission, but may have to take one or more course pre-requisites prior to enrolling in specific graduate credit courses. Acceptance is based on the candidate’s prior academic record, work experience, potential for growth, and the availability of space in the program.

Curriculum

The M.S. degree in Electrical Engineering requires a minimum of 30 semester hours of graduate credit, of which at least 5 classes must be in advanced course work. The selected elective courses must form a coherent plan of in-depth study and should be selected in consultation with the student’s advisor/thesis committee. A thesis or project is required of each candidate of the program. Candidates enrolled in full-time studies are required (1) to present and defend a written thesis of their research and (2) to submit a manuscript suitable for publication in a peer-reviewed journal. Candidates enrolled in part-time study are required to complete an engineering project, representing three semester-hours of credit, and to submit a written technical report. For full-time students, the degree requirements must be completed within three years first enrolling as a graduate student at AU. For part-time students, this time limit is extended to six years.

Course Requirements (Thesis Option)

| Technical Electives | 12-20 |
| Math Elective | 4 |
| ELEC 680 Graduate Thesis | 6-14 |
| ELEC 690 Graduate Seminar (mandatory each semester) | 0 |
| **Total Credit Hours Required for the Program** | 30 |
Degree Programs

Course Requirements (Project Option)

Technical Electives 23
Math Elective 4
ELEC 699 Master’s Project 3

Total Credit Hours Required for the Program 30

Technical Electives
A technical elective in Electrical Engineering is any graduate-level course with the ELEC designation. Up to two graduate-level courses offered in the School of Engineering, Chemistry, and Physics may also be used as technical electives with written approval of the student's advisor and thesis committee.

Mathematics Electives
Select ELEC 588 or one of the specified 400-level MATH courses offered for graduate credit:
ELEC 588 Applied Complex Variables 4
MATH 401 Advanced Engineering Mathematics 4
MATH 421 Numerical Mathematics 4
MATH 461 Geometry 4
MATH 481 Modern Algebra 4
MATH 491 Advanced Calculus 4

Glass Science
Overview
Glass Science (GS) involves the study of non-crystalline materials, which may be inorganic, organic, or metallic in nature. Glass scientists and engineers at the M.S. degree level are employed in positions ranging from research to development to plant operations. Many M.S. degree recipients quickly enter into management positions. Glass science can be divided into the fields of consumer products, which includes flat and container glass, fiberglass, and glasses used to produce TV, CRT, PDA, and other electronic devices, and specialty glasses, which include optical fibers, photonic materials, glasses for electronic applications, biological applications of glasses, glasses for the isolation of radioactive waste materials, space technology, homeland security, and a host of other, continually evolving applications in the areas of advanced technology.

The Master of Science in Glass Science at Alfred University seeks to produce graduates who can immediately enter positions throughout industry and government laboratories or continue to a Ph.D. in glass, materials science, or biomaterials. Entering students should ideally have a B.S. degree in some area of materials science, physics, chemistry, or, if interested in biological applications of glass, biology. Students from other backgrounds will be considered, but may be required to take specific courses from our undergraduate program to correct deficiencies before beginning their graduate program. Students seeking a terminal M.S. degree should have a strong interest in the application of science to solving problems.

This program emphasizes “hands-on” studies, with a solid research experience through the thesis project. This approach provides a level of confidence in our graduates which is reflected in their ability to move into industrial positions with minimal adjustment time. A terminal M.S. degree is particularly suited for those who desire an industrial position, with rapid advancement into managerial ranks, or for those with the desire to work in development facilities. Our graduates are also well prepared to continue to a Ph.D. in glass, materials science, or biomaterials.
Graduates of the program are well prepared for careers ranging from research and development to general plant operations. Our graduates are employed at Corning, Inc., Owens-Corning, IBM, Naval Research Laboratory, the U.S. Patent Office, and a wide range of other facilities ranging from major corporations to national laboratories to small high technology companies at the cutting edge of materials technology. Many of our graduates make a rapid transition into managerial positions in industry. A significant number of our graduates continue their education by pursuing doctoral degrees in Glass and related fields, with many recent Ph.D. students particularly interested in optical and biological applications of glass.

**Prerequisites and Undergraduate Preparation**
The program is open to qualified students holding B.S. degrees in chemistry, physics, biology, and engineering programs in materials, ceramics, glass, polymers, or biomaterials. It is also possible for graduates in other engineering programs, e.g. EE, to qualify for admission. Ideally, applicants should present evidence of undergraduate-level competence in chemistry, physics, and math through differential equations, with some experience with materials science, including the mechanical, thermal, and electrical behavior of solids. Some knowledge of the structure of solids is also desirable. Applicants without the required background will also be considered for admission, but may have to take pre-requisite courses before enrolling specific graduate classes. Acceptance is based on the candidate’s prior academic record, work experience, potential for growth, and the availability of space in the program.

**Curriculum**
The Master of Science in Glass Science requires a minimum of thirty semester-hours of graduate credit of which at least fifteen must be in advanced coursework. The degree also requires a minimum of fourteen hours of thesis credit and a one-credit research seminar, which is taken during the first semester of graduate enrollment. Candidates for the degree are required (1) to present and defend a written thesis of their research and (2) to submit a manuscript suitable for publication in a peer-reviewed journal. The curriculum is designed to be completed in three semesters of full-time study.

**Course Requirements**

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Electives</td>
<td>6</td>
</tr>
<tr>
<td>Characterization Electives</td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives</td>
<td>6</td>
</tr>
<tr>
<td>CEMS 660 Research Seminar</td>
<td>1</td>
</tr>
<tr>
<td>CEMS 680 Graduate Thesis</td>
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</tr>
<tr>
<td>CEMS 690 Graduate Seminar</td>
<td>0</td>
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<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>30</strong></td>
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**Glass Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 520 Optical Glasses</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 521 Behavior of Glass-forming Melts</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 522 Thermal Behavior of Glasses and Melts</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 523 Structure of Glasses</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 524 Mass Transport in Glasses and Melts</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 525 Advanced Optical Behavior of Glasses</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 526 Surface Properties of Glass</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 544 Structure and Characterization of Glasses</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 553 Mechanical Properties of Glasses and Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 555 Principles and Technology of Photonic Devices</td>
<td>3</td>
</tr>
</tbody>
</table>
Characterization Elective

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMS 541</td>
<td>Advanced Crystallography</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 542</td>
<td>Advanced Optical Microscopy</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 543</td>
<td>Analytical Transmission Electron Microscopy</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 544</td>
<td>Structure and Characterization of Glasses</td>
<td>3</td>
</tr>
<tr>
<td>CEMS 545</td>
<td>Characterization in Materials Science and Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Materials Science & Engineering

Overview

Material Science and Engineering (MSE) is concerned with the interrelationship among the structure, processing, properties, performance, and applications of materials, which includes ceramics, metals, polymers, and composites. MSE is an interdisciplinary field that combines aspects of chemistry, physics, mathematics, and engineering. Materials engineers provide “enabling technologies” for a wide range of industries including electronics, automotive, aerospace, medical, and more traditional manufacturing industries. Today, material science and engineering professionals are involved in developing improved fuel cells and hydrogen-storage devices for efficient energy production, designing lightweight and reliable materials for advanced aircraft and space vehicles, developing high temperature materials and coating for turbine applications, and devising remote sensors for detecting pathogens. Materials science and engineering also lies at the center of the nanotechnology revolution.

The Master of Science degree program in MSE at Alfred University seeks to provide students with a solid foundation in the fundamentals of material science while allowing them the flexibility to pursue advanced studies a focused area of their interest. The mission of the program is to prepare a graduate with both strong theoretical and “hands-on” laboratory skills. A student in the MSE program can also use their choice of technical electives and thesis research topic to obtain a broad general materials background; or the student can specialize in a specific materials field (e.g. metals, ceramics, polymers, or composites processing) or a specific area of analysis and characterization (e.g. mechanical properties of materials, electrical properties of materials, X-ray analysis, spectroscopy, or electron microscopy).

Graduates of the program are well prepared for careers in industrial research and development, industrial process engineering, and research at national labs. Some graduates of the program continue their education by pursuing doctoral degrees in MSE and related fields. Others pursue professional degrees in business, law, and medicine.

Prerequisites and Undergraduate Preparation

The program is open to qualified students with Bachelor of Science degrees in engineering and the physical sciences. Students with a degree in another science or engineering field may have to take prerequisite undergraduate materials science and engineering courses before enrolling in specific graduate classes. Typically, the student and his or her advisor develop a plan of study at the start of the program based on the student’s background and the student’s research topic. Applicants without the required background will also be considered for admission, but acceptance is based on the candidate’s prior academic record, work experience, potential for growth, and the availability of space in the program.

Curriculum

The Master of Science in Materials Science and Engineering (MS-MSE) requires a minimum of thirty semester-hours of graduate credit of which at least fifteen must be in advanced coursework.
The degree also requires a minimum of fourteen hours of thesis credit and a one-credit research seminar, which is taken during the first semester of graduate enrollment. Candidates for the degree are required (1) to present and defend a written thesis of their research and (2) to submit a manuscript suitable for publication in a peer-reviewed journal. The curriculum is designed to be completed in three semesters of full-time study although students with other engineering or science backgrounds may require four semesters.

### Course Requirements
- **CEMS 501** Solid State Physics
- or **CEMS 503** Thermodynamics of Materials 3
- **CEMS 545** Characterization in Materials Science & Engineering 3
- **Technical Electives** 9
- **CEMS 660** Research Seminar 1
- **CEMS 680** Graduate Thesis (14 credit minimum) 14
- **CEMS 690** Graduate Seminar (mandatory each semester) 0

**Total Credit Hours Required for the Program** 30

### Technical Electives
A technical elective in the MS-MSE program is any graduate course in the School of Engineering except CEMS 519. Graduate-level courses offered in Chemistry, Physics or Math may be used as technical electives with written approval of the thesis advisory committee.

### Mechanical Engineering

#### Overview
Mechanical Engineering (ME) is one of the largest, broadest and oldest engineering disciplines. Mechanical engineers use the principles of energy, materials and mechanics to design and manufacture machines and devices of all kinds. Mechanical engineers also create the processes and systems that drive technology and industry. Mechanical engineers are often called the ‘general practitioners’ of engineering because of the broad scope of their education and the diversity of their professional opportunities. Due to its breadth, mechanical engineering is generally linked to the economy as a whole; job prospects are relatively immune to isolated economic events.

The field of ME is notable for emphasizing versatility. A mechanical engineering education is an excellent foundation for work in other fields. Versatility is an asset in a world that is undergoing constant economic, political, industrial and social change. Mechanical engineers are positioned, not only to adopt, but also to define and direct change.

The mission of the Mechanical Engineering program is to provide a superior student-centered engineering education within a small university environment. Our dedicated faculty places the highest value on the teaching-learning process, while also being active in professional, technical and scholarly activities. Graduates of our program will understand the social and ethical implications of their engineering decisions, and be prepared to excel in the engineering profession.

#### Prerequisites and Undergraduate Preparation
The program is designed for individuals with a Bachelor of Science degree from an ABET-accredited program in Mechanical Engineering. Students with bachelor’s degrees in other engineering fields and the physical sciences or with degrees from non-accredited engineering programs will also be considered for admission.
Those admitted may have to take one or more course prerequisites prior to enrolling in specific graduate credit courses. Acceptance is based on the individual’s prior academic achievements and work experience, and upon the availability of space in the program.

Curriculum
The program leading to the M.S. degree in Mechanical Engineering requires a minimum of 30 semester hours of graduate credit, of which at least 24 credit hours must be in advanced course work. The selected elective courses must form a coherent plan of in-depth study and should be selected in consultation with the student’s advisor/thesis committee. Candidates for the degree are required (1) to present and defend a written thesis of their research and (2) to submit a manuscript suitable for publication in a peer-reviewed journal. For full-time students, the degree requirements must be completed within three years of first enrolling as a graduate student at AU. For part-time students, this time limit is extended to six years.

Course Requirements (Thesis Option)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Technical Electives</td>
<td>24</td>
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<tr>
<td>MECH 680 Graduate Thesis</td>
<td>6</td>
</tr>
<tr>
<td>MECH 690 Graduate Seminar (mandatory each semester)</td>
<td>0</td>
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<tr>
<td><strong>Total Credit Hours Required for the Program</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

Course Requirements (Project Option)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Electives</td>
<td>27</td>
</tr>
<tr>
<td>MECH 699 Master’s Project</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours Required for the Program</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

Technical Electives
A technical elective in Mechanical Engineering is any graduate-level course with the MECH designation. Graduate-level courses offered in the School of Engineering, Chemistry, Physics, and Mathematics may also be used as technical electives with written approval of the student's advisor and thesis committee.

Doctor of Philosophy Degrees in Engineering and Science

The Inamori School of Engineering offers the Ph.D. in three fields:

Ceramics
Glass Science
Materials Science & Engineering

The Ph.D. programs are open to qualified students holding Bachelor of Science and Master of Science degrees in the fields of science and engineering. Acceptance into the program is based on the applicant’s prior academic record, previous work experience, potential for growth, and the availability of space in the program.

The Ph.D. degrees require ninety credit hours beyond the requirements for the baccalaureate degree. Of these, a minimum of thirty-three credit hours must be in regular course work; the remainder may be earned as thesis credits. There is also a two-year residency requirement.

All three programs require the following four core courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>CEMS 503</td>
<td>Thermodynamics of Materials</td>
</tr>
<tr>
<td>CEMS 504</td>
<td>Kinetics and Non-equilibrium Processes in Materials</td>
</tr>
<tr>
<td>CEMS 501</td>
<td>Solid State Physics</td>
</tr>
<tr>
<td>CEMS 506</td>
<td>Advanced Engineering Math</td>
</tr>
</tbody>
</table>
All three programs also require successful completion of CEMS 660 - Research Seminar during the first semester, and attendance of CEMS 690 - Graduate Seminar during each semester in residence at Alfred University. Additional course requirements in the Material Science and Engineering program include CEMS 502 - Quantum Physics, CEMS 505 - Defects and Defect-Related Processes, and CEMS - 545 Characterization in Materials Science and Engineering. Students enrolled in the Glass Science program must complete fifteen credit hours of Glass courses work (CES 52X).

Students enrolled in the Ph.D. programs must pass a qualifying exam, usually within the first year of their enrollment. Students in Glass Science are also required to pass an oral comprehensive exam.

Candidates for the degree must write, present and successfully defend a doctoral thesis based on independent and original research conducted by the student. Thirty credit hours in thesis work must be a recorded part of each student’s program, and as many as fifty credit hours may be included, but the accumulation of these credits does not in itself imply the satisfaction of the requirement. The thesis must be acceptable for publication.

During the first semester, the student will select, with the approval of the Graduate Director, a faculty member of the School of Engineering to be his/her advisor. The advisor will then select at least three more members of the faculty, with due consideration of the specific research interest of the student, to form the Advisory Committee. This Committee will guide the student in course selections, thesis research, preparation for qualifying and final oral examinations, and, in general, care for the student’s academic well being.

A Graduate Manual, available in the office of the Graduate Program Director, gives more detailed instructions and descriptions of requirements when students begin residence.