

State University of New York College at Buffalo - Buffalo State University

Digital Commons at Buffalo State

Academic Catalogs, 1871-2018

Buffalo State Archives: History of the Institution

1972

College Catalog, 1972-1973, Graduate

Buffalo State College

Follow this and additional works at: <https://digitalcommons.buffalostate.edu/buffstatecatalogs>



Part of the [History Commons](#)

Recommended Citation

"College Catalog, 1972-1973, Graduate." Academic Catalogs, 1871-2018. Archives & Special Collections Department, E. H. Butler Library, SUNY Buffalo State.

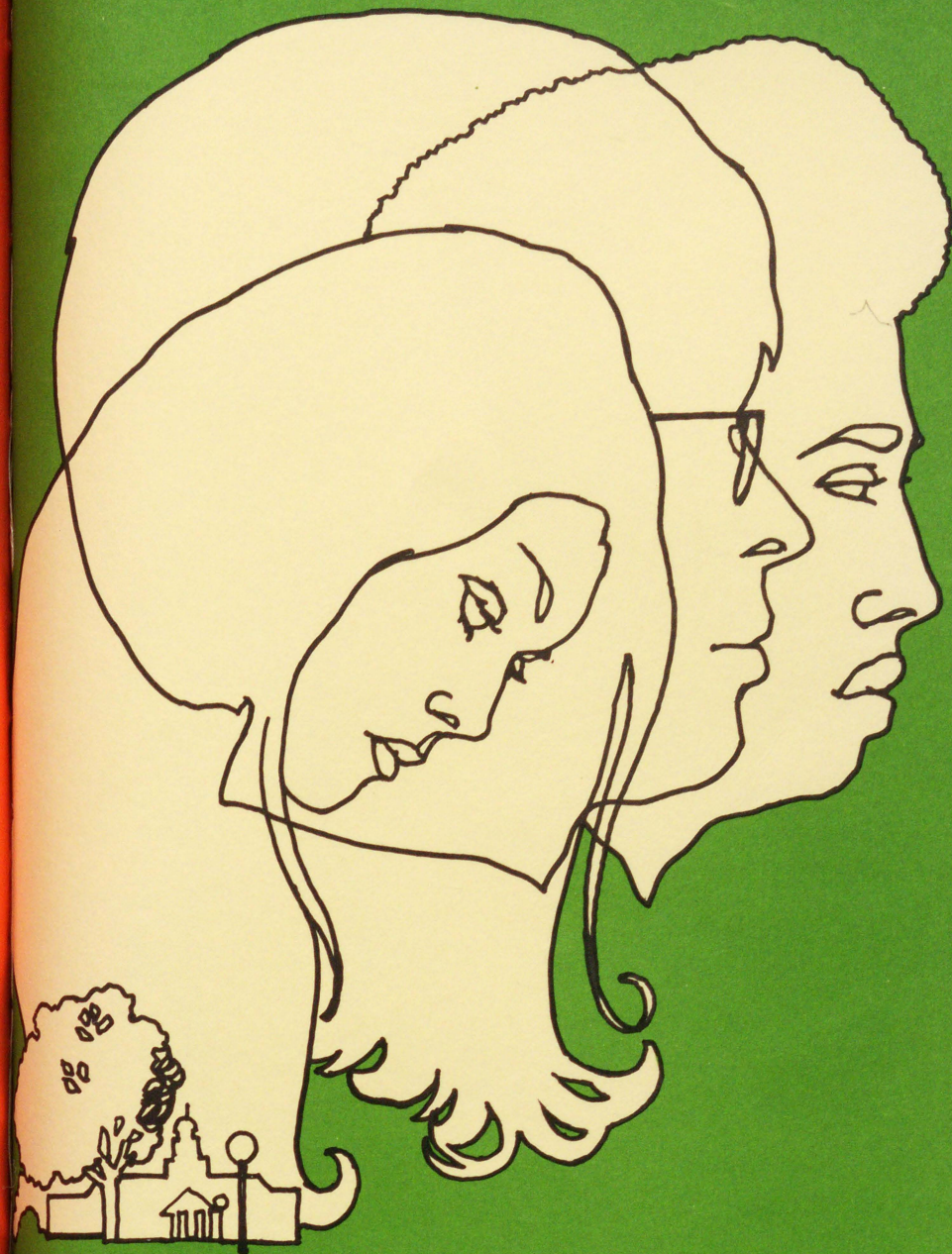
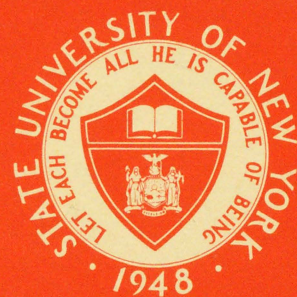
<https://digitalcommons.buffalostate.edu/buffstatecatalogs/185>

This Book is brought to you for free and open access by the Buffalo State Archives: History of the Institution at Digital Commons at Buffalo State. It has been accepted for inclusion in Academic Catalogs, 1871-2018 by an authorized administrator of Digital Commons at Buffalo State. For more information, please contact digitalcommons@buffalostate.edu.

MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A.
- 8B.
- 8C.
- 8D.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.

37.



State University of New York

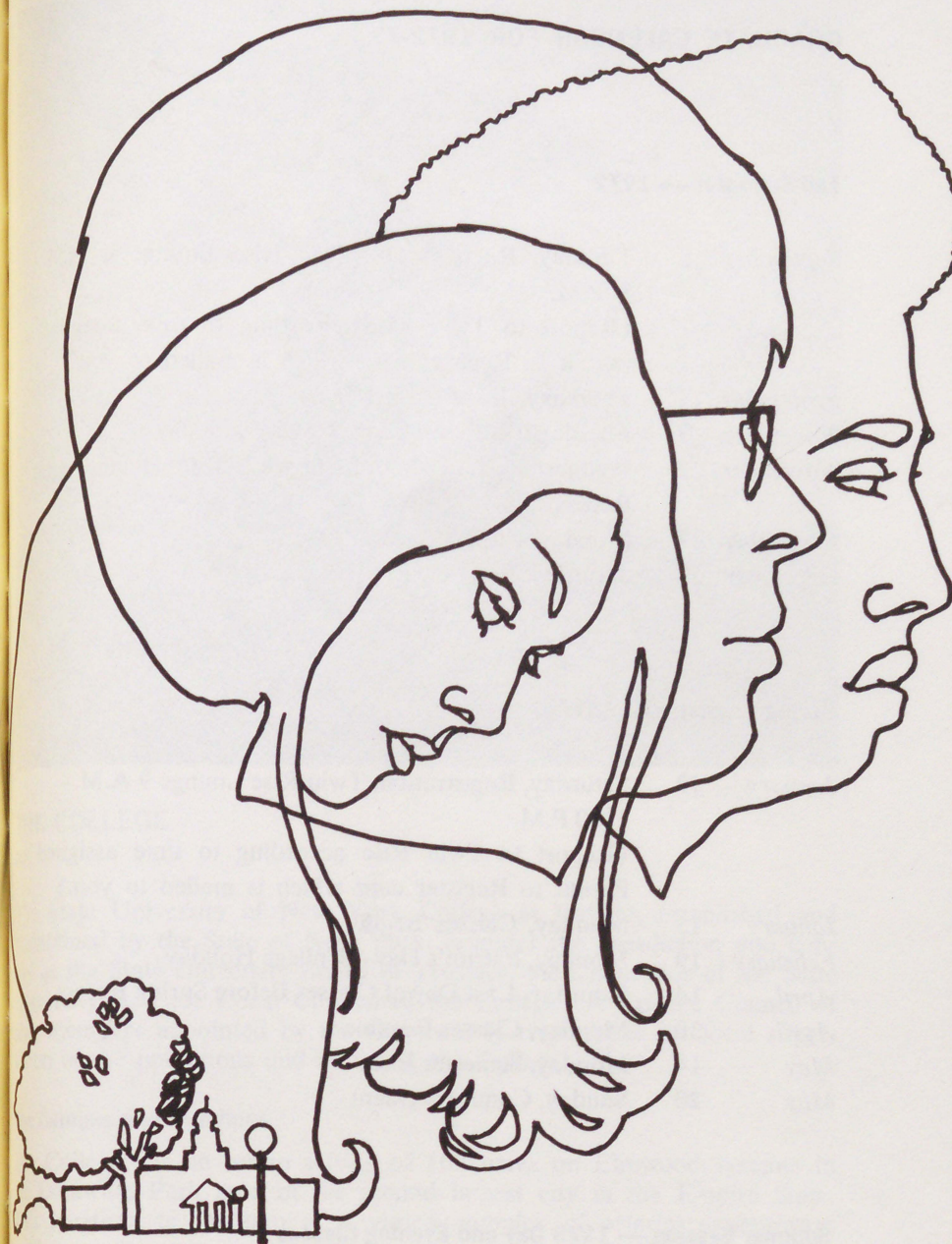
College at Buffalo

Graduate Catalog 1972-73

MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A
- 8B
- 8C
- 8D
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.
- 37.

LOWAND H. BUTLER LIBRARY
STATE UNIVERSITY COLLEGE



State University of New York **College at Buffalo**
Graduate Catalog 1972-73

GRADUATE CALENDAR FOR 1972-73

Fall Semester — 1972

<i>September</i>	5	Tuesday, Registration, Twin Rise Lounge 4 P.M. - 8 P.M. (Report to Twin Rise according to time assigned on Permit to Register card which is mailed to you.)
<i>September</i>	7	Thursday, Instruction Begins
<i>November</i>	7	Tuesday, Election Day — College Holiday
<i>November</i>	22	Wednesday, Last Day of Classes Before Thanksgiving Recess
<i>November</i>	27	Monday, Classes Resume
<i>December</i>	23	Saturday, Semester Ends

Spring Semester — 1973

<i>January</i>	13	Saturday, Registration, Twin Rise Lounge 9 A.M. - 1:00 P.M. (Report to Twin Rise according to time assigned on Permit to Register card which is mailed to you.)
<i>January</i>	15	Monday, Classes Begin
<i>February</i>	19	Monday, Patriot's Day—College Holiday
<i>April</i>	14	Saturday, Last Day of Classes Before Spring Recess
<i>April</i>	30	Monday, Classes Resume
<i>May</i>	14	Monday, Semester Ends
<i>May</i>	20	Sunday, Commencement

Summer Session — 1973 Day and Evening Classes

<i>First Session</i>	Monday, June 4 — Friday, July 13
<i>Middle Session</i>	Monday, June 25 — Friday, August 3
<i>Last Session</i>	Monday, July 16 — Friday, August 24
<i>Post Session</i>	Monday, August 6 — Friday, August 24



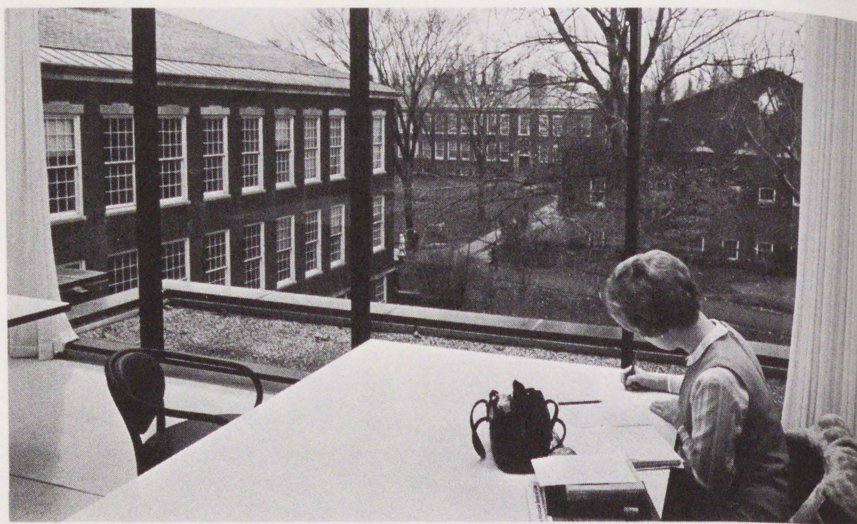
THE COLLEGE

The State University of New York College at Buffalo, established and maintained by the State of New York, is under the jurisdiction and control of the State University Board of Trustees, the Chancellor of the State University, and the Local Council of the College. A College Council of nine members appointed by the Governor is responsible for local supervision of the operations and affairs of the College.

The Campus and Buildings

The College has an urban setting of 102 acres on Elmwood Avenue in the Delaware Park area of the second largest city in the Empire State. This location, at the hub of a varied complex of arterial expressways leading to all sections of Buffalo, nearby counties and other areas of the State, gives ready access to the cultural, historical and scientific facilities which surround the campus.

In addition to the campus site on Elmwood Avenue, the College also operates the Great Lakes Laboratory on a nine acre site at the foot of Porter Avenue. The Laboratory is less than seven minutes from the State



College Campus via the Niagara Thruway. A renovated 2,200 square foot building contains facilities for chemical and biological analyses of water and sediments.

Five buildings were erected on the present campus when the College moved there in 1931. Rockwell Hall contains administrative offices and the main auditorium. Ketchum and Bacon Halls house faculty offices, seminar and classrooms. The Old Gym contains a New York State Regional Special Education Instructional Materials Center. The Campus House is occupied by the Alumni and Placement Offices.

New buildings are the Edward H. Butler Library, Student Union, New Science, New Gym, Campus School, Communication Center, and the Dr. Paul J. Weigel Health Center. Caudell Hall houses the Caudell Division; Upton Hall contains the Arts and Industrial Arts Divisions; Moot Hall houses dining facilities and Albright Hall houses the Music Department.

Chase, Cassety and Perry Halls contain faculty offices. Bishop and Neumann Halls, North Wing, South Wing, Scajaquada Halls and Towers, furnish resident accommodations for men and women.

Edward H. Butler Library

The Edward H. Butler Library is one of the newer contemporary buildings on campus housing a collection of over 250,000 volumes, 2,500 current periodicals, microfilm and microcard resources. It can ultimately accommodate 500,000 volumes and all material is available on open shelves. A *Library Handbook* contains a list of library services, hours and maps, and other pertinent data which is available upon request in the Reference Department.

GRADUATE CURRICULA

Graduate courses lead to the Master of Science in Education degree with majors in Art Education, Secondary Education, Elementary Education, Elementary Administration or Supervision, Exceptional Children Education, Home Economics Education, Industrial Art Education, Vocational Technical Education and College Student Personnel Services.

The Master of Arts degree is offered in Biology, Chemistry, English, History, Mathematics, Philosophy and Physics.

The Department of Chemistry at State University College has American Chemical Society Accreditation and is listed nationally as one of only 227 out of a possible 2,500 departments of chemistry in the United States to receive this honor.

Class Schedules

Graduate students may register for courses in the late afternoon, evening and Saturday morning classes, and during the Summer Session in accordance with schedules issued by the Graduate Office. Some graduate courses may be scheduled during the day session.

Admission

Admission to this College and to all other colleges of the State University of New York is based on the academic qualifications of the respective applicant, and is made without regard to the race, color, creed, or national origin of individuals.

Applicants meeting the following requirements are eligible for admission to graduate degree programs:

1. An approved baccalaureate degree, i.e., one granted by a college or university which is accredited by an appropriate regional or national accrediting agency or by a State University.
2. An acceptable academic record. An applicant must present an official transcript showing the minimum cumulative average required by the degree program. The Master of Science degree in Education requires a minimum of 2.30 on a 4.00 scale. The minimum required in the Master of Arts degree programs varies with the program and is listed with the other program requirements in the curriculum section of this catalog.
3. Students who are not admitted to degree programs will not be permitted to register for graduate courses.
4. Any student who does not begin his graduate program during the semester for which he was accepted will be dropped and must request readmission.

Procedure Before Registration

1. Secure an application for Admission from the Coordinator of Graduate Admissions.
2. Return application, with all data required, to the Coordinator of Graduate Admissions as early in the semester preceding first registration as possible. Applications will not be accepted after March 1 for the fall semester, October 1 for the spring semester and May 1 for the summer session.
3. Furnish the Coordinator of Graduate Admissions with *all* official transcripts prior to the due date as indicated above. If you are currently attending or have graduated from the State University College at Buffalo, it will *not* be necessary to request a transcript from the Registrar's office. Students who transferred to Buffalo State must request an official transcript from their former institution(s) showing the work completed there.
4. Scores for Graduate Record Examination, General Aptitude Test and Advanced Test in the major area are required for admission to the Master of Arts programs. The Student Personnel Administration Program requires only the General Aptitude Test. Test scores must be on file in accordance with established admission deadline dates.

Registration

Preregistration material will be mailed out each semester to active graduate students who have been registered during the previous year and to new applicants for the next semester. The mailing list is processed by computer and change of name, address, or program, or mechanical errors may result in an omission from the mailing list. Every effort will be made to include all active graduate students but there can be no guarantee that a student will be able to preregister. All those who cannot complete preregistration by mail must register in person on the regular registration day. Any student who has not registered for a graduate course within three academic semesters will be dropped from the graduate program and must re-apply for admission. Re-application must be made in accordance with established admission deadline dates.

Admission To Full Graduate Status

Full graduate status is dependent upon: (a) completion of all credentials required for admission to Graduate Studies, and (b) approval of the Director of Graduate Studies and of the appropriate Dean, Division Director or Department Chairman.

Appointment Of An Adviser

An adviser will be appointed after graduate status is granted. Therefore, the student should contact the chairman of the department responsible for his program as soon as he receives acceptance.

Admission To Candidacy

Filing an application for admission to candidacy for the master's degree is the personal responsibility of each student after he has completed a minimum of six hours. At the completion of *twelve* semester hours of graduate work, he *must* apply for candidacy or he will be dropped from the graduate program. Admission to Candidacy depends upon:

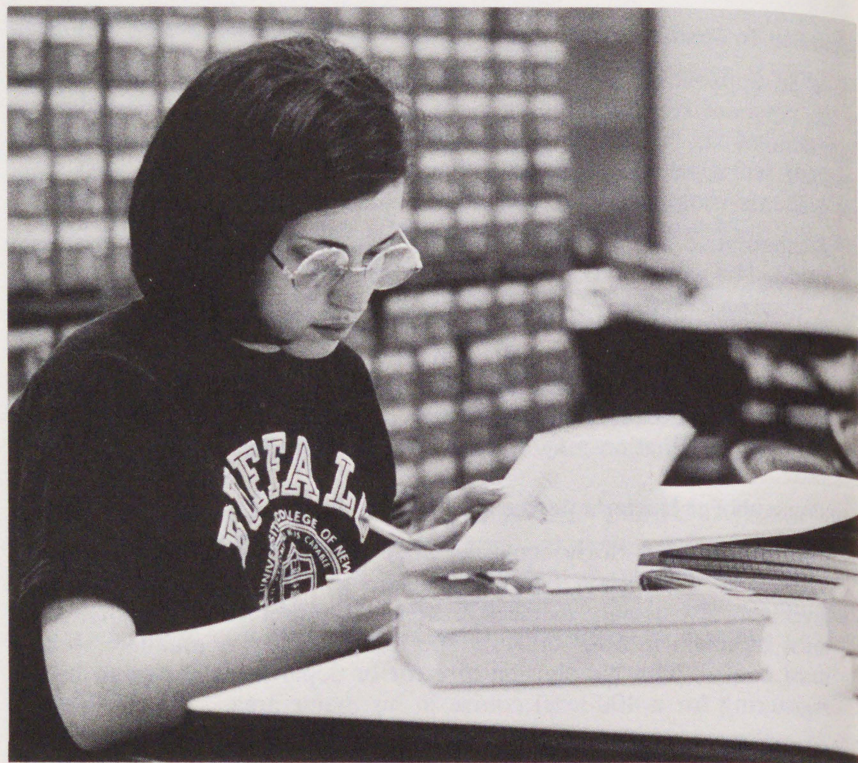
1. A cumulative average of B or better in *all* courses taken for graduate credit. No work of D grade will be accepted.
2. A recommendation from the adviser of the candidate to the Director of Graduate Studies.
3. The Graduate Record Examination Aptitude Test is required at this point, if not already taken for admission. Information on the Graduate Record Examination may be secured at the Graduate Office.

Requirements For Master's Degree

1. Completion of a thirty semester hour program of graduate courses. The master's program permits a maximum of twelve hours in 400-level courses, usually in elective areas. Requirements in major areas must be taken in 500- 600- or 700-level courses. A graduate student must consult with his division director or department chairman before registering for a 400-level course in his major area.
2. A cumulative average of B or better in *all* graduate courses completed in this College. Some programs may require a minimum average in the subject area. Not more than nine hours of C, and no work of D grade, will be accepted toward the master's degree.
3. Completion of residence requirements. A course shall satisfy the requirements for residence if it is offered on the campus, within the City of Buffalo, at the College Camp, or at a branch established by the College. Residence credit may be granted for courses completed at another unit of the State University.
 - A. For a graduate of this College—a minimum of twenty hours *in residence* is required out of the total thirty.
 - B. For graduates of another college—a minimum of twenty-four credit hours in residence is required out of the total thirty.
4. Non-resident credit. Non-resident credit is defined as transfer credit earned at another college or university or credits earned in off-campus courses in this College. Transfer credits can be accepted for courses taken at another college:
 - A. If they are evaluated as being equal in scope and content to those offered by this College.
 - B. If they form a coherent part of the required program of study.
 - C. If they have been completed within seven years prior to registration at this College.

MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A
- 8B
- 8C
- 8D
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.
- 37.



D. If they are of A or B grade. Credits earned at another college with grades of C or D are not accepted for transfer to this College. Transfer credits are not included in the cumulative average.

5. Completion of all course work within six years of registration in first course.
6. Student must file an application for the degree immediately after registration in the last course or last semester.

Maximum Student Load

- A. Students holding full-time teaching positions are limited to a maximum of six credits per semester, or nine credits per academic year.
- B. During Summer Session, students are permitted to earn a maximum of one credit per week of attendance, that is, two credits for a two-week program; three credits for a three-week program; six credits for a six-week program, etc.
- C. Maximum load for full-time students is twelve hours per semester.
- D. No credit will be granted toward a degree for work taken beyond these limits at this College or elsewhere.

GRADUATE ACADEMIC REGULATIONS

Attendance Regulations

Attendance regulations are established by each instructor for his section(s) and must be distributed to his classes at the beginning of each semester or summer session. Students are responsible for knowing and observing the regulations.

Withdrawal From Courses

Dropping a course means cancelling registration in one or more courses but short of full withdrawal from the College. A student may drop a course before the end of the first half of a course and receive a "W" for that course, provided that he has consulted with the instructor concerned. A student who drops a course after the end of the first half of a course will receive the grade of "E" for that course. If a student does not process an official drop and fails to continue with the course, his grade will be "E."

An exception may be made for unusual circumstances beyond the control of the student. In such cases the student may petition the appropriate Dean in whose division the course is being offered for permission to drop the course without penalty. After the Dean consults with the instructor involved he may or may not approve the dropping of the course. If he approves, a "W" will be entered on the record.

Grading System

A	4 quality points	E	0 quality points
B	3 quality points	I	No points, work incomplete
C	2 quality points	W	Official withdrawal
D	1 quality point		

Incompletes

1. An instructor may grant a status of "incomplete" only when:
 - A. The circumstances which have led to a student's failure to complete course requirements are known to be beyond the student's control, viz., serious illness, unavailability of material, has been planned for educational reasons etc.
 - B. Chairman/Director of department/division involved has received notice of granting of incomplete containing a brief description of nature of unfinished work.
2. An "incomplete" must be made up within the following semester, not including the summer session.
3. The Registrar is authorized to record a grade of E for a student who has not, within the stipulated time period, fulfilled course requirements.
4. In the event the Instructor who had granted an "incomplete" is not available to evaluate the work done by the student in fulfillment of course requirements during the stipulated time period, any recom-

mendation for change from the "incomplete" to a letter grade may be made by the Chairman/Director of the absent Instructor.

5. Appeals from any of these regulations may be made through the Office of the Vice-President for Academic Affairs, the latter being empowered to issue waivers.

Cumulative Average

A cumulative average of "B" or better in *all* graduate courses completed at this College is required for the master's degree. The cumulative average is determined by dividing the total number of quality points earned by the number of semester hours attempted. If a student has not earned a cumulative "B" average upon completion of the total semester hours required for his program, he *may* be permitted to enroll for additional courses to the maximum number of 6 semester hours to attempt to make up his deficiency.

Graduate Curricula Requirements

The present requirements for the master's degree in all divisions became effective September 1, 1972. All students who begin graduate work after that date will meet these requirements. Students who began graduate work prior to September 1, 1972 have the option of completing the requirements of the curricula in effect when they began or of completing the new requirements.

Course Numbering System

- 400 courses—open to upper division undergraduate students and to graduate students if so designated in the catalog description or approved by Division Director or Department Chairman. Additional work is required for graduate credit.
- 500 courses—open to graduate students only.
- 600 courses—open to graduate students only—generally limited to majors in the area or to others with sufficient preparation.
- 700 courses—advanced courses requiring greater preparation.

Credit and Eligibility

Credit hours for courses listed will be indicated only for special workshops and seminars or in laboratory courses. In all other cases, credit will be three semester hours. For exact credit to be earned, consult the fall, spring or summer session schedules.

Courses at the 400 level are listed only by number and title; course descriptions may be found in the general college catalog. Graduate students should consult their Division Director or Department Chairman before registering in 400 courses in their major area or in 400 courses not listed in the graduate bulletin. A maximum of twelve hours may be taken in the total master's program.

Eligibility for all graduate courses is determined by the instructor.

TUITION AND FEES

The State University of New York has authorized the collection of tuition and fees at a uniform rate. These are subject to change.

Fall and Spring Semesters — Graduate Tuition

New York State Resident

Full-Time (12 semester hours)	\$500.00 per semester
Part-Time (less than 12 hours)	\$ 40.00 per sem. hour

Out of State Resident

Full-Time (12 semester hours)	\$750.00 per semester
Part-Time (less than 12 hours)	\$ 50.00 per sem. hour

College Fee

All Full-Time Students	\$ 12.50
All Part-Time Students	\$.85 per sem. hour

The State University Board of Trustees have mandated a series of deposits, fees and charges to become effective at the beginning of the academic year 1972-73. At this printing exact dates and regulations for the local campuses have not been determined. All Fall 1972 registrants shall be formally notified of all applicable charges prior to final registration. Registrants for subsequent semesters shall be provided the same information.

Room (double occupancy) ¹	\$325.00 per semester
Board (19 meals per week) ²	\$305.00 per semester

Graduate housing facilities are available for single students. For further information contact the Director of Housing.

Summer Sessions

The schedule of tuition and fees listed above will also be in effect during the Summer Sessions plus the collection of a Student Activity Fee of \$.25 per Semester hour. Students whose entire summer session program will be off-campus are exempt from the Student Activity Fee.

Refunds

A student who is given permission to cancel his registration shall be liable for payment of tuition in accordance with the following schedule:

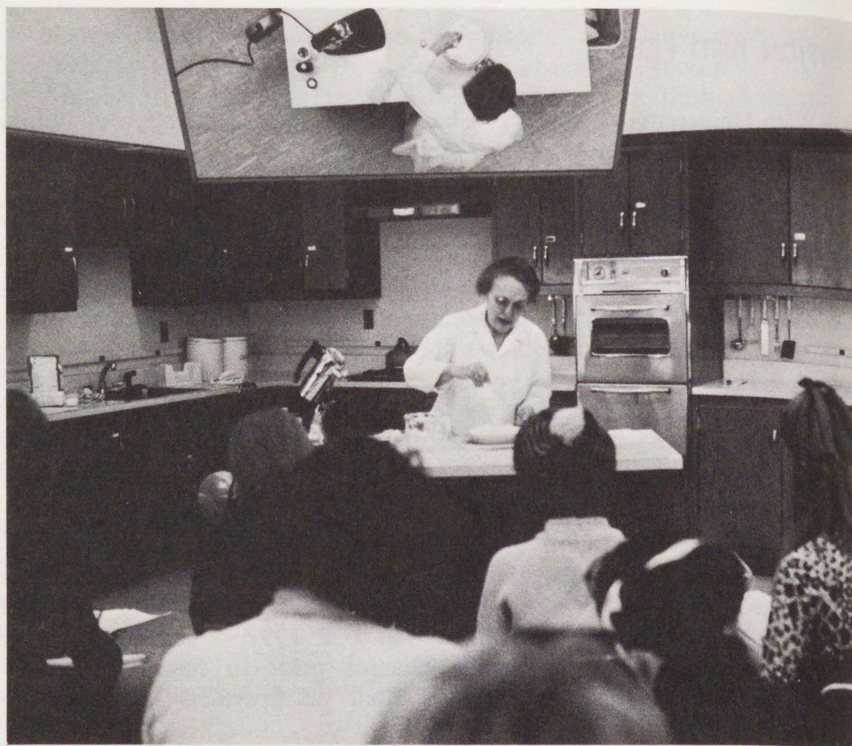
Liability During	Semester	8-Week Term	6-Week Term
1st Week	0	0	0
2nd Week	30%	60%	70%
3rd Week	50%	80%	100%
4th Week	70%	100%	
5th Week	100%		

¹Does not include the cost of telephone service

²Subject to change

MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A.
- 8B.
- 8C.
- 8D.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.
- 37.



FINANCIAL AIDS

A limited number of graduate assistantships are available in some of the Master of Arts programs. The applicants should write directly to the department chairman. One graduate assistantship in the Office of Institutional Research is open to an applicant with some knowledge of statistics. A few internships are awarded annually by the Office of Student Affairs. Federal fellowships are available on a yearly basis in the Exceptional Education programs. Teacher Corps fellowships in Elementary Education are awarded on a biennial basis in even numbered years. New York State residents may be eligible for the Scholarship Incentive Awards or loans through the Higher Education Assistance Corporation.

Monsignor Bogacki Fellowship—This fellowship provides a \$500 award annually for a student who has "evinced a sincere and serious interest in Polish culture or history, and who is or will become enrolled as a graduate student in Buffalo State College in a program with emphasis on Polish and East European studies and, if not then enrolled in a regular graduate program, has demonstrated an ability to handle successfully work in the areas of Polish culture and history." The fellowship will be awarded by the Committee on Soviet and East Central European Studies. Application is to be made to Dr. Walter M. Drzewieniecki, Chairman, Program in Soviet and East Central European Studies.

FACULTY OF APPLIED SCIENCE AND TECHNOLOGY

Applied Science and Technology offers graduate teacher education programs in the divisions of Industrial Arts Education and Vocational Education and the department of Home Economics Education. Additionally, graduate courses are offered by the departments of Safety Studies, Nutrition and Food Science, Environmental and Consumer Studies, and Human Development, Family and Community Relations. The programs offered by each division or department are described under the following headings.

HOME ECONOMICS EDUCATION

	Credit Hours
Technical	9-12
Environmental and Consumer Studies	
Human Development, Family and Community Relations	
Nutrition and Food Science	
Professional	3-6
Home Economics and International Education	
Evaluation	
Trends in Teaching Home Economics	
Home Economics Education for Adults	
Curriculum Planning in Home Economics	
Occupational Education in Home Economics	
Leadership in Home Economics Supervision	
Required Courses in Arts and Sciences	3-6
Chosen by advisement from Art, English, Geography, Mathematics, Music, Philosophy, Science and Social Sciences.	
Research	3-6
HEE 600 Seminar in Home Economics Education Research (Required)	3
(Each candidate, after conference with her adviser, may elect to take HEE 690 or HEE 695 in addition to HEE 600. HEE 600 may serve as a basis for these.)	
HEE 690 Research Study	3
HEE 695 Master's Thesis	6
Unrestricted Electives	3-9
Total Requirements	30
	13

NUTRITION AND FOOD SCIENCE

- NFS 408. Advanced Nutrition (g)
 NFS 426. Food Demonstration (g)
 NFS 428. Meal Management (g)
 NFS 433. Food Management for Disadvantaged Families (g)
 NFS 490. Field Experience (g)

NFS 500. Bio-Nutrition
 Evaluations of the close interrelationships of amino acids, lipids, carbohydrates, vitamins, and minerals in human nutrition based on recent metabolic findings; evaluations of recent metabolic and physiological data of both human beings and animals; and the relationship of these factors to recommended dietary allowances.

NFS 501. Seminar on Trends in Nutrition
 Recent developments, techniques, and findings in the field of human nutrition, food needs, and their application. The use of guest speakers as professional contributors.

NFS 604. Trends and Research in Foods
 Recent research and trends in food preparation and technology. Some experimental work in food preparation.

NFS 605. Recent Advances in Nutrition
 Review of principles of nutrition. Current trends and research in nutrition. Emphasis on application of nutrition information to specific problems of individual and society.

ENVIRONMENTAL AND CONSUMER STUDIES

- ECS 402. Management and Family Finance (g)
 ECS 420. Housing and the Community (g)
 ECS 425. Clothing Design Through Tailoring (g)
 ECS 427. Clothing Design Through Flat Pattern (g)
 ECS 431. Furnishing the Home (g)
 ECS 437. Environmental Textile Testing (g)
 ECS 447. Clothing in Relation to Human Behavior (g)
 ECS 457. Fashion Merchandising (g)
 ECS 490. Field Experience (g)

ECS 509. Textiles
 A study of the current developments in the field of textiles with particular emphasis on information for the consumer with regard to the selection, utilization and care of modern textiles.

ECS 510. Trends in Housing and Home Furnishings
 Problems related to housing and home furnishings; planning and construction; consultants, field trips.

ECS 516. Family Clothing
 A study of economic, psychological, and

sociological factors that affect the purchase, selection, care and construction of clothing for the family; management of time, money, and energy as they relate to family problems, development of individual studies in areas of particular interest.

ECS 519. Decision Making in Management
 Consideration of problems of the family in relation to the management of the home; speakers and consultants; field trips, individual problems.

ECS 520. Family Financial Planning
 Consideration of family financial problems; alternate choices in the light of family goals and values; examination and evaluation of available materials for use in teaching.

ECS 525. Clothing Design Through Draping
 Experience with the Manipulation of a two dimensional fabric to cover three dimensional forms, mobile and immobile, using a variety of fabrics to achieve individualized design.

ECS 606. Trends in Home Management
 Newer developments in the field of man-

agement in the home; problems met in teaching management in secondary and adult classes; individual work on problems in accordance with student needs.

ECS 608. Clothing Design
 Draping and flat pattern with emphasis on couturiere techniques.

ECS 612. New Developments in Household Equipment
 Survey and evaluation of developments in large and small equipment used in homes and schools; field trips, laboratory and demonstrations.

HOME ECONOMICS EDUCATION

HEE 429. Home Economics and International Education (g)

HEE 435. Occupational Education in Home Economics (g)

HEE 590. Special Problem
 Investigation of a particular problem to be planned and carried out by student, with consultation and guidance of (1) an instructor approved by Home Economics Graduate Faculty and/or (2) a member of the Home Economics Graduate Faculty.

HEE 600. Seminar in Home Economics Education
 Recent research, curriculum problems in home economics; selected individual and/or school curricular problems investigated through action research culminating with research reports.

HEE 601. Trends in Teaching Home Economics
 New directions, problems in home economics education explored based upon needs and interests of students. Consultants; field trips; group discussion among students, educators.

HEE 602. Leadership in Home Economics Supervision
 Consideration of the development of home economists for leadership positions in education and in related areas within the profession including principles of supervision, role of the supervisor related to leadership, human relations and evaluation.

ECS 617. Recent Trends in Clothing
 Interpretation, use and evaluation of present trends in teaching clothing construction; emphasis on techniques and the importance of management in the use of time, money, energy and equipment.

ECS 627. Comparative Methods in Clothing Construction
 Experimental techniques in the manipulation of fabric by considering fiber, weave, finish, hand, and design; qualitative analysis of the results, use of time and effort.

HEE 607. Evaluation in Home Economics Education
 Techniques for indentifying and appraising progress toward goals in home economics; methods of teaching appropriate to the achievements of these objectives; individual work on problems of evaluation.

HEE 615. Home Economics Education for Adults
 Recent developments in home economics education for adults.

HEE 621. Curriculum Planning in Home Economics
 Opportunities to review planning, development, evaluation of curriculum in home economics education. Investigation of recent curriculum pattern changes: HELPS, HEEPS, programmed learning modules.

HEE 690. Research Study
 An undertaking engaged in by one or more students related to the area of special interests. The study must be planned cooperatively and approved by a member of the Home Economics Graduate Faculty.

HEE 695. Thesis
 Individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

HUMAN DEVELOPMENT, FAMILY AND COMMUNITY RELATIONS

HDFCR 409. Human Development and Family Relations—The Individual and Family in Society and Culture (g)

HDFCR 418. Parent Education (g)

HDFCR 420. Interventive Methods (g)

HDFCR 429. Educational Programs for Pre-kindergarten Children in Urban Settings (g)

HDFCR 430. Issues of the Modern American Family (g)

HDFCR 440. Psychopathology of Parent Child Relations (g)

HDFCR 490. Field Experience (g)

HDFCR 502. Personality Development in the Family

Study of personality development emphasizing the role of the family in shaping the individual from infancy through adulthood; contributions of recent research in personality, child development, family relations.

HDFCR 503. Family Relations

Basic concept of the family; current emphasis; social trends as these influence the family; research on the family.

HDFCR 504. Trends in Early Childhood Programs

Consideration of the needs of families for quality child development programs in light of recent research on cognition and socialization during infancy and early childhood. Emphasis is placed on program development and techniques for parent involvement in child development centers.

HDFCR 611. Resources for Teaching Family Relations

Techniques and media for teaching family relationships; examination and evaluation of materials for teaching at various levels. *Prerequisite or concomitant:* functional course in family relations.

INDUSTRIAL ARTS EDUCATION

The fifth year program in Industrial Arts Education is designed to develop, extend and enhance the technical and professional competencies of graduate students and teachers in Industrial Arts. Completion of the program provides the Master of Science in Education degree and satisfies the requirements for permanent certification in New York State.

Courses in Technical and Related Fields

Professional Education:

I.A. 601 Research Seminar in Industrial Arts 3

I.A. 628 Curriculum Development in Industrial Arts 3

I.A. 624 Evaluation in Industrial Arts 3

Technical Education 12

Chosen by advisement from the following: I.A. 608, 612, 613, 615, 617, 618, 619, 620, 621, 623, 627, 629, 630, 590.

Note: I.A. 400 level courses listed below may be selected with the approval of the advisor or department chairman.

Free Electives 9

Total Requirements 30

I.A. 402. Graphic Reproduction Processes (g)

I.A. 403. Plastics Technology (g)

I.A. 406. Production and Research in the Forest Products Industries (g)

I.A. 407. Architectural Drawing (g)

I.A. 408. Electronics Communication (g)

I.A. 409. Electronic Instrumentation (g)

I.A. 410. Materials and Products of the Ceramic Industry (g)

I.A. 417. Descriptive Geometry (g)

I.A. 418. Research and Experimentation in Metal Technology (g)

I.A. 419. Electronics Frequency Modulation (g)

I.A. 421. Industrial Arts for Students With Special Needs (g)

I.A. 423. The Industrial Arts Consultant in the Elementary School (g)

I.A. 427. Graphic Solutions (g)

I.A. 501. Industrial Arts in the Elementary School

Opportunities for classroom teachers to promote and develop ideas for their own situations; planning, organizing and constructing activities for the elementary school; use of a variety of materials, development of IA in the elementary school and the changing industrial and technological process and their effect upon society. Not for IA majors.

I.A. 513. Industrial Ceramics

A breadth course, general review and familiarization with the total field of the ceramics industries will be developed through class discussions and manipulative experiences with each material. Persons wishing to take I.A. 613, but not able to meet the prerequisites should take this course. *Prerequisite:* I.A. 206 and laboratory chemistry or similar courses with appropriate background preferred.

I.A. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

I.A. 600. Foundations in Industrial Arts

European and American antecedents of Industrial Arts; social and technological factors that make the Industrial Arts a

major condition of culture; psychological and philosophical basis for teaching Industrial Arts.

I.A. 601. Research Seminar in Industrial Arts Discussion, research, reports on individual problems, studies of current research problems. Required of Industrial Arts students registered for the degree of Master of Science in Education.

I.A. 602. Field Studies Related to Industrial Arts Education

Individual and group studies of industrial activities in the Niagara Frontier; the woodworking and fabrication trades; metal industries; plastic and fibre products; graphic arts; electrical, ceramic, airplane and automotive manufacturer; conferences with representatives of industry and labor organizations.

I.A. 606. Supervision of Industrial Arts

Problems and techniques concerning administration and supervision of elementary, secondary, and adult programs in industrial arts education at the federal, state, and local levels.

I.A. 607. Industrial Arts Facility Planning and Management

Problems involved in planning new industrial arts facilities or the remodeling of existing laboratories; concepts in relationship of objectives to facilities, space allocation, area development and organization, service requirement, criteria for selection and placement of equipment, analyzing available equipment and writing specifications, actual experience in evaluating an existing Industrial Arts laboratory and in proposing improvements.

I.A. 608. Metallic Fusion and Joining Technology

An intensive course for students interested in the improvement of technical skills in welding, using the latest equipment and knowledge. Use of both gas and electric welding equipment required. Study of the latest research into welding applications in industry will be made.

I.A. 609. History of Industrial Arts

European antecedents; attempts to introduce technical instruction into American education; Russian Manual Train-

ing; Swedish Sloyd System of instruction; the Arts and Crafts Movement; the Manual Arts movement; growth of the vocational concept in America; Industrial Arts as pre-vocational training; the social-economic concept for Industrial Arts; Industrial Arts as the study of industry; Industrial Arts as the study of technology.

I.A. 612. Plastics Technology

This course is designed to aid the development of those who have had some contact with plastics, and who wish to expand their depth and breadth of knowledge in plastics, for instruction in public schools.

I.A. 613. Ceramics Technology

A detailed investigation of Ceramics Technology with emphasis on research, individual needs and problems, and competency. A technical laboratory course for all ceramic materials, products, and processes. Course content applicable to all levels of education. *Prerequisite:* I.A. 206 or I.A. 513 and chemistry (laboratory type preferred).

I.A. 615. Power Technology

Principles of operation, design, function of power systems employing various types of engines; mechanisms involved in the development, transmission and control of power with emphasis on dynamic analysis of specific units and their application.

I.A. 617. Electronics

Electronics in the junior and senior high school Industrial Arts program; advanced electronic theory and practice in communications; development of instructional materials, demonstration equipment, projects, and visual aids. *Prerequisite:* I.A. 408.

I.A. 618. Electronics

Advanced study in circuit analysis of instruments; familiarization with electronic instruments, their operation, and application. *Prerequisite:* I.A. 408.

I.A. 619. New Techniques and Materials in Forest Products Industry

Consideration given to design, application, and use of power equipment; preparation and treatment of wood; exploration of adhesives, abrasives, and finishes; experiences in lamination and pattern-

making; introduction to house construction; application of new techniques and materials in wood to our culture.

I.A. 620. The Forest Products Industry

Processes and procedures involved in the derivation of chemicals, solvents, human consumption goods and other by-products from the tree; research and experimentation to interpret industrial processes; application of bending, laminating, veneering, inlaying and production techniques; development of teaching materials to improve classroom presentations.

I.A. 621. New Methods and Techniques in Metal Technology

Primarily a research seminar involving investigation of recent and current experimental developments in metalworking knowledge; securing of data from primary sources, abstracts, and actual contact with the developing laboratories or industries; laboratory facilities available for original development or experimentation on part of the student.

I.A. 623. Industrial Arts for the Elementary School

Understanding the role of the industrial arts consultant; gain increased proficiency in teaching children to work with tools and materials; child nature and growth, his potency of experience; understanding the relationships of industrial arts to the elementary school; develop the ability to administer a program of elementary industrial arts.

I.A. 624. Evaluation in Industrial Arts

General principles of evaluation; construction and use of objective tests, informal devices and techniques of evaluation applicable to Industrial Arts; selection, construction, and use of appropriate instruments of evaluation; observation, rating scales, anecdotal records, personnel systems, and the Industrial Arts project; interpreting, recording and using the results of evaluation for the improvement of instruction. *Prerequisite:* I.A. 601, I.A. 628.

I.A. 628. Curriculum Development in Industrial Arts

Philosophical foundation of Industrial Arts; current social, economic, and technological conditions; curriculum patterns and curriculum controls; course of study

construction; approaches to teaching; programs, structure and evaluation. *Prerequisite:* I.A. 600.

I.A. 629. Drafting—Problems and Techniques

Technical proficiency in specific areas of drafting; the program of drafting in the junior and senior high schools; governmental and industrial drafting standard; conventional and simplified drafting practices; evaluation of pupil progress in technical drawing.

I.A. 630. Graphic Arts

Updating content and methodology of graphic arts education as an area of industrial arts; activities and presentations emphasizing innovations brought about by recent developments in industry; instruction in techniques of copy preparation for reproduction, general, technical and graphic arts photography, current methods of stripping and platemaking, principles of offset lithographic presswork for junior and senior high industrial arts. *Prerequisite:* I.A. 402.

I.A. 635. Supervision of Industrial Arts Student Teachers

Intensive study of the professional role of the public school teacher who supervises industrial arts student teachers; provides opportunity to develop video tapes, type scripts and other related supervisory instruments; students will develop specific supervisory skills as appropriate to the supervision of student teachers.

Prerequisites: 15 semester hours of graduate study and 2 years of teaching experience.

I.A. 690. Master's Study

A Study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office. *Prerequisite:* I.A. 601, I.A. 628.

I.A. 701. Seminar in Industrial Arts Writing and Publishing

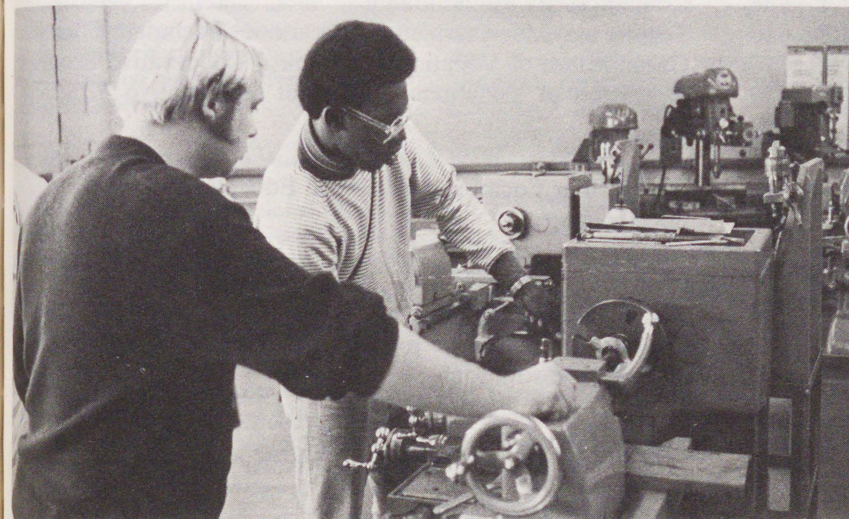
A seminar for those with a genuine desire and ability to express ideas in written form. An opportunity to learn the mechanics of writing and getting it published.

I.A. 702. Seminar in the Philosophy of Technology

A critical examination of prevalent study of "Technology" in Historical Perspective, and a study of prevalent views and issues relative to technology: its meaning, its characteristics; its interdisciplinary scope; its relation to science; its place in education.

I.A. 703. Seminar in the Development of Instructional Materials

A seminar for those with a genuine desire to develop and organize teaching materials. An opportunity to maximize the effectiveness of the instructional program and its resultant benefits.



VOCATIONAL TECHNICAL EDUCATION DIVISION

The Division offers a new graduate program leading to permanent certification and the Master of Science in Education degree. This program was developed to extend and improve the professional competencies of occupational teachers. In addition, a new sixty semester hour program leading to certification as a school administrator or supervisor is in the planning stage and should be available in 1973.

Planning the Program

The candidate will be assigned or may select an adviser and together they will plan a program based on individual needs and the degree requirements. All courses should be selected by advisement.

Professional Studies

Offerings include:

V.T. 600	Contemporary Issues in Occupational Education
V.T. 601	Supervision of Vocational Education
V.T. 602	Administration of Vocational Education
V.T. 603	Selected Topics in the Organization, Administration and Supervision of Vocational Technical Education
V.T. 605	Occupational Guidance for Career Exploration
V.T. 606	History and Philosophy of Occupational Education
V.T. 618	Social Dynamics of Occupational Teaching
V.T. 620	Structure of Occupational Programs
V.T. 625	Interrelationships of Labor, Management and Occupational Education
V.T. 635	Curriculum Problems of Vocational Schools
V.T. 636	Contemporary Methodology
V.T. 640	Testing and Measurement in Vocational Technical Education
V.T. 650	Organization of Vocational Technical Cooperative Programs
V.T. 655	Operation of Vocational Technical Cooperative Programs

Research

V.T. 595	Research in Vocational Technical Education
V.T. 590	Special Project

Technical

V.T. 500	Technical Project
	Courses or internship program; these may be offered here or at other institutions

Electives

(Outside of VT courses and by advisement)

Total Requirements

Credit
Hours

15

3-6

0-6

3-12

30

V.T. 500. Technical Project

An internship experience with industry or business to study new techniques, operations and processes; cooperatively initiated by faculty and student and requiring the development of instructional material reflecting the new knowledge and skills gained.

V.T. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by the student, with consultation and guidance from the instructor.

V.T. 595. Research in Vocational Technical Education

A review of current research in occupational education, study of methods of educational research, locating appropriate information, and developing research proposals.

V.T. 600. Contemporary Issues in Occupational Education

A survey course intended to familiarize the graduate student in practical arts and vocational technical education with some of the most current issues, practices, policies, and literature in and about occupational education.

V.T. 601. Supervision of Vocational Education

Nature and scope of supervision; surveying, studying, analyzing needs and facilities; planning, initiating, and maintaining supervisory programs; evaluating procedures and outcomes, trends in Vocational Technical Education.

V.T. 602. Administration of Vocational Education

Nature and scope of vocational technical education; administrative responsibilities for curriculum, student selection, rating, integration with industrial, advisory boards, community relationships, and liaison with state and federal authorities.

V.T. 603. Selected Topics in the Organization, Administration and Supervision of Vocational Technical Education

Problems arising in the organization, administration, and supervision of vocational technical education.

V.T. 605. Occupational Guidance for Career Exploration

A course specifically designed to acquaint occupational educators with those techniques and procedures of vocational guidance which may be effectively employed in career counseling for a changing world of work.

V.T. 606. History and Philosophy of Occupational Education

A historical review of the philosophical, sociological, economic, and political indices which have influenced the development of vocational technical education.

V.T. 618. Social Dynamics of Occupational Teaching

An examination of the role and status of teachers in the present social structure; relative roles of administrator, teacher, and para-professionals in occupational education; effect of certification and tenure.

V.T. 620. Structure of Occupational Programs

An examination of the structure of occupational education, a survey and analysis of present programs; the assessment of articulation between programs; the examination of the structure for viability in the light of internal and external forces promoting change.

V.T. 625. Interrelationships of Labor, Management and Occupational Education

A study of the roles of labor and management in our society and their relationship to occupational education; their historical development, the impact of technology, and interpreting the needs of industry for occupational and continuing education.

V.T. 635. Curriculum Problems of Vocational Schools

A course planned to fit the needs of vocational technical education instructors in the preparation and use of curriculum material for vocational technical training.

V.T. 636. Contemporary Methodology

An examination of new and emerging techniques of instruction and the application to specific individual problems; development by students of models appropriate to their particular subject area and the nature of the student body.

V.T. 640. Testing and Measurement in Vocational Technical Education

A study of the elements to be measured in the teaching of vocational technical subjects, together with the application of sound testing procedures to the teaching of shop subjects, technical and related technical subjects. Development of test materials to meet individual teaching situations.

V.T. 650. Organization of Vocational Technical Cooperative Programs

Provides information for industrial arts or trade teachers and department chairmen or supervisors interested in establishing industrial cooperative programs.

SAFETY STUDIES DEPARTMENT

S.ED. 400. Fundamentals of Safety (g)

S.ED. 416. Safety Education (g)

S.ED. 417. Driver Education and Traffic Safety I (g)

S.ED. 426. Driver Education and Traffic Safety II (g)

S.ED. 430. Fundamentals of Industrial Accident Prevention (g)

S.ED. 564. Advanced Driver Education and Safety

Course designed to fit the needs of Teachers of Driver Education courses now in practice in the secondary schools. Evaluation of Audio-Visual Aids, survey and evaluation of research studies in driver education, practice driving analysis, analysis and evaluation of diagnostic tests. Evaluation of techniques for im-

Included are procedures for promoting a new program, working with advisory boards, developing employment opportunities, arranging training outlines, planning instructional facilities and securing Regents accreditation.

V.T. 655. Operation of Vocational Technical Cooperative Programs

A course for those interested in conducting effective instruction in an industrial cooperative program, including how to interview employers, supervise trainees, interpret legal aspects, prepare records and reports, and conduct classes in related theory.

proving practice driving instruction and project development. Teachers should have one year of teaching driving education on the secondary level before registering. *Prerequisite:* S.ED. 417.

S.ED. 565. Trends and Problems in Driver and Traffic Safety Education

Teaching, administration and supervision of driver education and traffic safety programs; methods and materials, resource people and agencies; critical analysis of existing procedures; discussion of problems; research findings; field trips and lectures by leaders in related specialized areas. *Prerequisite:* S.ED. 417 (when S.ED. 417 was completed after Sept. 1, 1966, then S.ED. 426 would also apply). *Special Note:* Required to obtain permanent approval as a Driver Education Instructor.

INTERDEPARTMENTAL

I.D. 424. Peoples and Institutions of India (g)

I.D. 557. Administration of Instructional Resources

Analyses of the fundamental elements of instructional resources programs — physical facilities; procedures and standards for administering materials, equipment and production services; budgeting, improving utilization.

I.D. 559. Workshop in Nurturing Creative Behavior

The program is designed to bring to the participant the latest research findings and developments in the study of creative behavior, and to help enable him to translate these findings into educational or managerial practice. Participants receive instruction based upon a program that has been used during the past 18 years at the Annual Creative Problem-Solving Institutes in Buffalo. Each individual, alone and in sub-groups, works intensively on projects of direct concern to him in his educational or managerial efforts.

I.D. 560. Seminar in Creative Studies

This program is designed to extend participants' understanding and application of the total body of supporting literature in the field of creative studies.

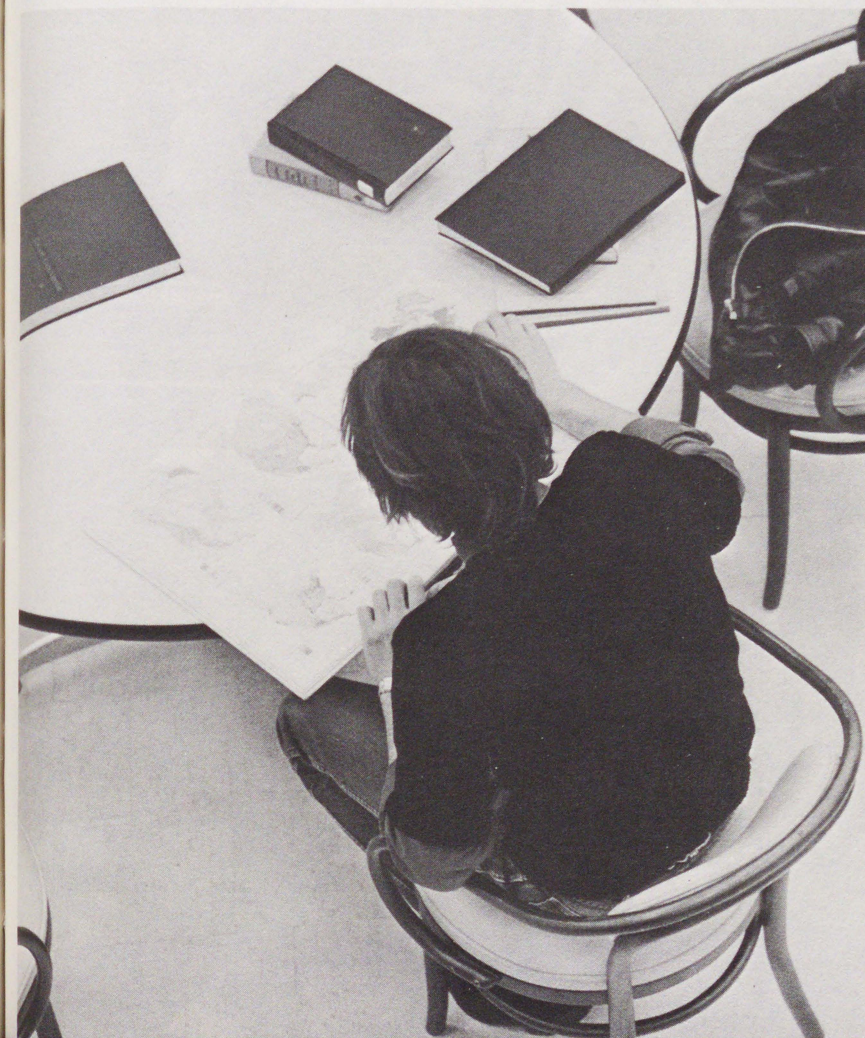
In addition to his classroom experiences in the Seminar, each participant has access to a unique, comprehensive reference center of books, theses, articles, films, tapes, etc. on creativity. *Prerequisite:* Workshop described above, or Creative Problem-Solving Institute or equivalent.

I.D. 562. Audio System

An introduction to sound recording — basic theory, operational principles and fidelity of sound system. Relationship of audio system to the communication process and to other media.

I.D. 570. Theory and Application of Instructional/Learning Resources

Course content will include learning theory, communications theory and the methods and techniques of applying these to instruction, generally; and audiovisual instruction, specifically.



MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A.
- 8B.
- 8C.
- 8D.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.
- 37.

EDWARD H. BUTLER LIBRARY



FACULTY OF THE ARTS

The Faculty of the Arts includes the departments of Art Education, Design, Fine Arts, Music, and Speech and Theatre Arts. The graduate degree program offered by the Faculty of the Arts is a Master of Science degree in Art Education. Graduate courses given by the Design, Fine Arts, Music, and Speech and Theatre Arts Departments may be elected to satisfy Arts and Sciences requirements in other graduate programs.

ART EDUCATION PROGRAM

*Credit
Hours*

Design and Fine Arts courses 12-15

Dynamics of Teaching 3-6

Art Ed 510	Art Materials Workshop (3)
Art Ed 601	Administration in Art Education (3)
Art Ed 605	Seminar in Art Education (required for Master's Degree in Art Education) (3)

Innovation Research 3-6

Art Ed 591	} Special Research in (Specified Areas) (3-6)
Design 591	
Fine Arts 591	

Each candidate, after a conference with his adviser,
must select one of the following requirements:

Art Ed 602	Research Workshop in Art Education (3)
Art Ed 690	} Master's Project (3)
Design 690	
Fine Arts 690	
Art Ed 695	Master's Thesis (6)

Required Courses in Arts and Sciences 9-12

Unrestricted Electives 0-3

Total Requirements 30

*Art courses at the 400 level may be taken for graduate credit under
advisement.*

ART EDUCATION DEPARTMENT

ART ED. 500. Art in the Elementary School

The use of art materials, processes, and procedures in the elementary school; individual experience in various media appropriate at different grade levels; consideration of the role of the classroom teacher in self-contained, supervised, or art specialist programs; related problems of the school curriculum. Elective for Elementary and Exceptional Children students.

ART ED. 501. Art Development in the Pre-School Child

The intellectual, emotional, physical, perceptual, and creative development of the young child from birth through the kindergarten; roles of parent and teacher in the creative growth of the child; implications for the choice of materials, processes, and procedures appropriate at the pre-school level. Elective for Elementary and Exceptional Children students.

ART ED. 510. Art Materials Workshop

Studio experiences in various materials appropriate for use with younger children under typical classroom situations; activities such as powder tempera painting, mural painting, simple screen printing, cardboard printing, clay modeling, frame weaving, stitchery, extra class studio hours. Elective for Art, Elementary, and Exceptional Children majors.

ART ED. 591. Special Research Study in Art Education

Research or investigation of a particular problem, to be planned and carried out by student; with consultation and advice from an instructor who agrees to supervise the study; aimed at making a general contribution to art as contrasted with personal improvement and understanding; reported in a document and/or exhibition. Specified area included in all college records.

ART ED. 601. Administration in Art Education

The role of the supervisor of art in relation to the community, school administration, classroom teacher, and special art teacher; functions of art consultant and special art teacher in elementary schools; preparing budgets, procuring equipment and ordering supplies; extra class reports and discussions.

ART ED. 602. Research Workshop in Art Education

Individual and group research in problems of art education; reports and discussions of current research activity in art education; techniques of research as applied to unique problems in art education and in evaluating the effects of unlike influences upon unlike individuals; extra class research problems.

ART ED. 605. Seminar in Art Education

Problems in teaching and supervising art in various types of communities and schools; contemporary philosophy, psychology, principles and practices in art and education; relationship of current research to programs, policies and procedures for the teacher and supervisor; extra class reports and discussions. Required of all Art Education majors.

ART ED. 690. Master's Project

A study undertaken by one or more individuals on a problem of special interest; aimed at making a special contribution to art education, as contrasted with normal class activity; may be presented, in part, as an exhibit of materials collected or prepared — including a major exhibit of art work related to study — with theories and findings reported to an acceptable form according to directions given by the Graduate Office.

ART ED. 695. Master's Thesis

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Division; representing a significant contribution to the literature of art or art education, acceptable to the student's adviser and chairman of the appropriate area of specialization. *Prerequisite:* Art Ed. 602.

DESIGN DEPARTMENT

DES. 511. General Crafts Workshop

Studio experience in various crafts suitable for both adult leisure-time activity and use with older children; individualized work in wood, metal, clay, textiles, leather, plastics, and other materials; designing for the crafts; visits to crafts exhibitions; extra class studio hours equal to class hours. Elective for all students, except Art majors. Art majors by advisement.

DES. 512. Design, Principles and Practices

A study of general design principles and applications for *non-art* majors; the elements of design in space organization; theoretical abstract and functional applications to individual plans and projects; tutorial relationship with instructor; extra class assignments, including studio hours equal to class hours. Elective for all students, except Art majors.

DES. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student; with consultation and advice from instructor.

DES. 591. Special Research Study in (Specified Area) (3-6)

Research or investigation of a particular problem, to be planned and carried out by student; with consultation and advice from an instructor who agrees to supervise the study aimed at making a general contribution to art as contrasted with personal improvement and understanding; reported in a document and/or exhibition. Specified area included in all college records.

DES. 592. Independent Studio in Design

Independent studio experience by a student, with consultation and advice from an instructor related to area of study who agrees to supervise the study; involving studio experiments and experiences not otherwise available in regular course offerings. Specified area included in all college records.

DES. 640. Graduate Studio in Design

The organization of space with paint and materials; the designed form in theoretical, abstract, and functional applications; designing for the home, commerce, industry, theater, crafts; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 641. Graduate Studio in Product Design

A concentrated study of product design, on an advanced level; functional and aesthetic problems in the design of useful products; experience with common and newly-developed materials; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 642. Graduate Studio in Wood Design

The designer-craftsman approach to advanced projects in wood; hand, power and machine tool practice; aesthetic and functional considerations in design; finishing methods, care of equipment; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 643. Graduate Studio in Textile Design

Advanced work in textile design and processes; weaving, printing, applique; traditional and experimental techniques; individual projects and explorations; studies of work of designer-craftsmen; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 644. Graduate Studio in Metalsmithing

Advanced practice in metalsmithing techniques; raising, forging, welding, riveting, casting, spinning, other forming methods; parallel studies of the work of leading designer-craftsmen; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 646. Graduate Studio in Jewelry

Practical and aesthetic aspects of jewelry design and construction; advanced experience in fabrication techniques, casting, gem polishing, and stone setting according to student experience level; tutorial relationship with instructor; extraclass assignments, minimum studio hours equal to class hours.

DES. 647. Casting Techniques in Jewelry

Preparing wax models, molds, burning out, and lost-wax casting of jewelry in silver and gold; utilizing the centrifugal casting machine; related steam casting, cuttlefish casting, open-mold casting, associated techniques, extraclass assignments, including studio hours equal to class hours.

DES. 649. Graduate Studio in Pottery

Creative problems in design for market production of pottery; practice in forming clay and plaster; mold and model making; slip and solid clay production; color, glaze, kiln operation; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 650. Graduate Studio in Graphic Design
Developing effective communications in illustration and design; realistic, experimental, and expressive approaches; preparation for single and multicolor reproduction; planning publications, tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

DES. 651. Home and Community Design
Functional, aesthetic, geographic, economic, social and political factors affecting the design of home, school, and community; designing and redesigning homes; planning new cities and redeveloping older communities and facilities; extraclass assignments, including minimum studio hours equal to class hours.

DES. 652. Seminar Studio in Scenography
Advanced projects in stage design, with interim seminar discussions and project reports; historical research on stage design; integration of visual design components in contemporary productions;

FINE ARTS DEPARTMENT

F.A. 590. Special Project
Research or investigation of a particular problem, to be planned and carried out by student; with consultation and advice from instructor.

F.A. 591. Special Research Study in Fine Arts
Research or investigation of a particular problem, to be planned and carried out by student; with consultation and advice from an instructor who agrees to supervise the study; aimed at making a general contribution to art as contrasted with personal improvement and understanding; reported in a document and/or exhibition. Specified area included in all college records.

F.A. 592. Independent Studio in Fine Arts
Independent studio experience by a student, with consultation and advice from an instructor related to area of study who agrees to supervise the study; involving studio experiments and experiences not otherwise available in regular course offerings. Specified area included in all college records.

F.A. 610. Graduate Studio in Drawing
Individual concentration in drawing for

theoretical and practical applications of original designs; problems in the construction and painting of stage sets.

DES. 653. Seminar Studio in Light Design
Advanced experiments, research, and practice in light design, with integrated seminar discussions and reports on individual projects; theoretical and practical experience in the use of light as an art form; light as an aspect of theater design; practical experience in plays under production whenever possible.

DES. 690. Master's Project
A study undertaken by one or more individuals on a problem of special interest; aimed at making a special contribution to design as contrasted with normal class or studio activity; may be presented, in part, as an exhibit of materials collected or prepared—including a major exhibit of design related to study—with theories and findings reported to an acceptable form according to directions given by the Graduate Office.

advanced students; emphasis on growing facility of expression, application to painting and graphic arts; tutorial relationship with instructor; use of model; related study and gallery visits; extraclass assignments, including minimum studio hours equal to class hours.

F.A. 611. Graduate Studio in Painting
Individual activities in painting for advanced students; emphasis on personal growth and mastery of chosen media; tutorial relationship with instructor; studio and outdoor problems; use of model; related study and gallery visits; extraclass assignments, including minimum studio hours equal to class hours.

F.A. 613. Graduate Studio in Graphic Arts
Advanced work in printmaking; relief, intaglio, planographic, serigraphic processes; related drawing and design considerations; parallel studies of graphic artists; care of equipment; tutorial relationship with instructor; extraclass assignments, including minimum studio hours equal to class hours.

F.A. 619. Graduate Studio in Sculpture
A general studio in advanced sculpture; utilizing additive, subtractive, and con-

structive methods; continued personal development in such media as clay, plaster, wood, stone, metal; tutorial relationship with instructor; extraclass assignments including minimum studio hours equal to class hours.

F.A. 623. Graduate Studio in Photography
Advanced black-and-white and color photography; as a form of expression, as illustration, as event-recording; as used in the making of teaching aids and as used in the planning of publications; tutorial relationship with instructor; extra-

class assignments, including minimum studio hours equal to class hours.

F.A. 690. Master's Project
A study undertaken by one or more individuals on a problem of special interest; aimed at making a special contribution to Fine Arts, as contrasted with normal or studio activity; may be presented, in part, as an exhibit of materials collected or prepared—including a major exhibit of art work related to study—with theories and findings reported to an acceptable form according to directions given by the graduate office.

MUSIC DEPARTMENT

MUS. 500. Music in Education
For those engaged in classroom teaching, exceptional education, therapy, but who have little knowledge of or skill in music. A variety of music experiences and activities for children and a basic knowledge of music fundamentals and skills acquired in a laboratory-workshop setting. Lessons, projects, readings. A more intensive version of Mus. 317, Music For Children, suited to the graduate level, therefore not to be elected by students who took Mus. 317, Music For Children or Mus. 404, Classroom Music Seminar as undergraduates. *Prerequisite:* Music 301 or its equivalent.

MUS. 501. Survey of Music Literature
Survey of music from antiquity to the present; examination of scores, book reviews from texts in library on develop-

ment of vocal and instrumental music. *Classification:* Elective.

MUS. 502. American Folk Music
Lectures, readings and listening experience in the various idioms of American folk music. *Classification:* Elective.

MUS. 503. Latin American Music
A survey of the ethnic and European heritage of Latin American Music from early aboriginal sources to contemporary composition. *Classification:* Elective. *Prerequisite:* Music 301 or its equivalent.

MUS. 504. Introduction to Symphonic Literature
The art of enjoying symphony orchestra music; the understanding of the masterpieces of Classic, Romantic and Contemporary composers; attendance at selected concerts. *Classification:* Elective.

SPEECH AND THEATRE ARTS DEPARTMENT

SP. & T.A. 406. Secondary School Speech Activities (g)

SP. & T.A. 418. Creative Dramatics (g)

SP. & T.A. 419. Speech Activities in the Elementary School (g)

SP. & T.A. 420. Oral Interpretation of Children's Literature (g)

SP. & T.A. 426. Advanced Acting (g)

SP. & T.A. 450. Directing (g)

SP. & T.A. 528. Seminar in Creative Dramatics

Philosophy, methods, and materials of informal playmaking with children; attention to special interests and creative projects. *Prerequisite:* Sp. & T.A. 418 or equivalent.

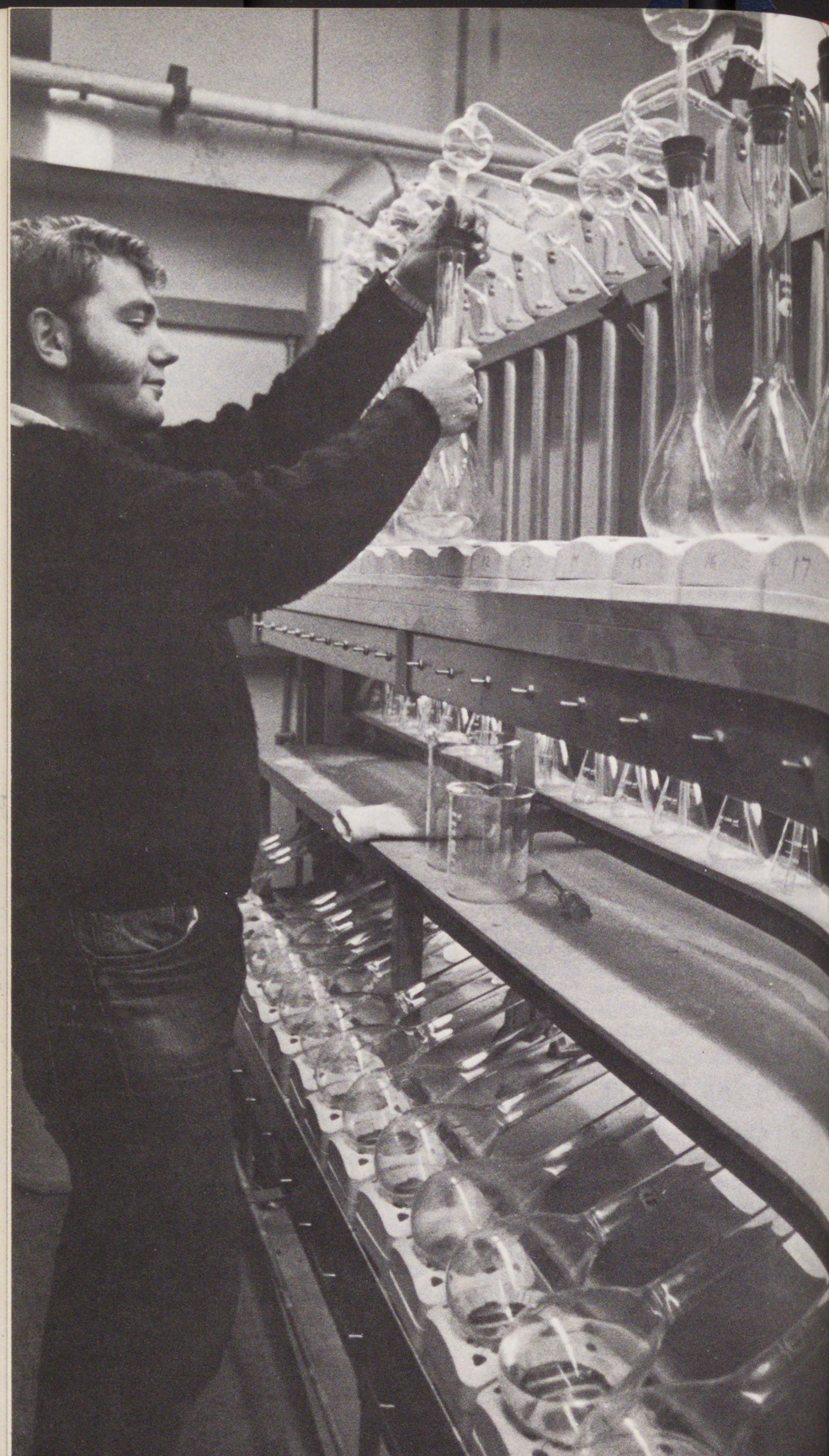
MA

1.
2.
3.
4.
5.
6.
7.
8A
8B
8C
8D
9.
10.
11.
12.
13.
14.
15.
17.
18.
19.
21.
24.
25.
26.
27.
28.
29.
30.
31.
32.
35.
36.
37.

MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A.
- 8B.
- 8C.
- 8D.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.
- 37.

EDWARD H. BUTLER LIBRARY



FACULTY OF ARTS AND SCIENCES

The Faculty of Arts and Sciences includes the department of Anthropology, Biology, Chemistry, Economics, English, Foreign Languages, General Science, Geography, Geosciences, Health, Physical Education and Recreation, History, Mathematics, Philosophy, Physics, Political Science, Psychology, and Sociology. Details concerning the degree programs and courses offered in these departments are provided under the appropriate headings in this section of the catalog.

ANTHROPOLOGY DEPARTMENT

- | | |
|---|--|
| ANTH. 402. Cultural Anthropology (g) | ANTH. 409. Social Structure (g) |
| ANTH. 403. Language and Culture (g) | ANTH. 410. Anthropology and Education (g) |
| ANTH. 404. Peasant Peoples in a Modern World (g) | ANTH. 411. African Systems of Kinship and Marriage (g) |
| ANTH. 405. History of Anthropological Thought (g) | ANTH. 412. Seminar in Anthropology (g) |
| ANTH. 406. Religion, Myth, and Magic (g) | ANTH. 414. Social Change in African Societies (g) |
| ANTH. 408. Culture and Personality (g) | ANTH. 415. Seminar in Archeology (g) |

BIOLOGY DEPARTMENT

MASTER OF ARTS IN BIOLOGY

Prerequisites:

1. Bachelor's degree, or its equivalent, from an accredited college or university.
2. An undergraduate minimum grade point average of 2.5 on a 4-point basis.
3. Acceptable scores on the verbal, quantitative, and biology sections of the Graduate Record Examination.
4. Three letters of recommendation evaluating their academic and personal qualifications.
5. A minimum of forty-eight semester hours of course work in science and mathematics. These shall include one year each of college physics, organic chemistry, and mathematics. The mathematics requirement may be satisfied by calculus or statistics, depending on the needs of the student's program. Applicants with deficiencies may be admitted with probationary status until such deficiencies are removed.

Requirements for Master of Arts Degree:

1. A minimum of thirty semester hours; these shall include six semester hours allocated as thesis credit.
2. A minimum cumulative average of 3.00 on a 4-point basis. The candidate shall take no more than thirty-eight semester hours to achieve this average.
3. Proof of competence in one modern foreign language. Upon recommendation of the candidate's Thesis Committee, this requirement may be met through an appropriate combination of Biometrics and Computer Science.
4. A written thesis based on the candidate's research in an area of biology.

Shortly after admission to the program, the student will be given a series of short examinations on major areas of biology; these examinations will be administered by appropriate Biology faculty. This procedure will help insure that the student begins the program having a basic familiarity with the various areas of biology.

By the end of twelve semester hours, the student shall present a thesis proposal for consideration by the Biology Department Graduate Committee. The thesis proposal shall include a review of appropriate literature.

At the end of his program, the candidate will take an oral examination in defense of his thesis and to demonstrate his knowledge of appropriate related material.

MASTER OF SCIENCE IN SECONDARY EDUCATION — BIOLOGY

Prerequisites

- Major Area of Specialization 24
- Also required, one year in each of the other sciences and in mathematics.

Required Courses

- 18 semester hours are required in graduate science and mathematics courses selected by advisement.

Research:

- Required of all students who are candidates for the master's degree. Each candidate, after a conference with his adviser, must select one of the following requirements:

- Sci. 595 Research Methods & Techniques in Science Education 3
- Biol. 690 Project 3
- Biol. 695 Master's Thesis 6

Professional Education

- Secondary Education Elective (Student may elect a course in science in lieu of this requirement.) 3

Unrestricted Electives

- Total Requirements 30

BIOL. 402. Vertebrate Physiology (g)

BIOL. 403. Economic Biology and Conservation (g)

BIOL. 404. Plant Morphology (g)

BIOL. 405. Organic Evolution (g)

BIOL. 406. Biometrics (g)

BIOL. 408. Plant Physiology (g)

BIOL. 409. Field Biology (g)

BIOL. 410. Soil Biology (g)

BIOL. 411. Parasitology (g)

BIOL. 413. Ornithology (g)

BIOL. 414. Mammalogy (g)

BIOL. 415. Radiation Biology (g)

BIOL. 416. Advanced Genetics (g)

BIOL. 417. Field Mycology (g)

BIOL. 418. Limnology (g)

BIOL. 419. Vertebrate Zoogeography (g)

BIOL. 420. Field Studies in the Conservation of Biological Resources (g)

BIOL. 421. Invertebrate Structure and Function (g)

BIOL. 521. General Ecology

The physical environment and its effects on the living organism; plant-animal relationships; interspecific and intraspecific relationships; problems in human ecology. Offered for graduate students with limited backgrounds in biology. *Prerequisite:* General Biology. *Special Note:* Not open to Biology Majors.

BIOL. 522. Human Genetics

Biological basis of human genetics; study of the incidence, nature, and understanding of various genetic conditions. *Prerequisite:* None. *Special Note:* Intended as a graduate service for non-biology majors. Not open to Biology Majors.

BIOL. 523. Basic Human Anatomy and Physiology

Study of basic anatomy and physiology of cells, tissues, and organ systems of the human body. *Prerequisite:* None. *Special Note:* Not available for credit toward M.A. in Biology.

BIOL. 524. Problems in Environmental Biology

Ecosystems as functional units of the environment; dynamics of population growth; characteristics of natural communities; the nature of environmental

deterioration; possible solutions for achieving quality environment and human life. Field trips may be required. *Prerequisite:* Six (6) credit hours of biology or physical science. Not available for credit toward M.A. in Biology.

BIOL. 525. Man and Evolution

A study of man; his evolutionary history and position in the animal kingdom. Not available to Biology majors.

BIOL. 580. Institute in Biology

Lectures, laboratory and discussion relating to a specific area of biology as defined in a proposal. Topics vary and are announced in advance. *Prerequisite:* Specified in Institute proposal. *Special Note:* Not available for credit toward M.A. in Biology.

BIOL. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

BIOL. 604. Morphogenesis in Vascular Plants

A study of the structural anatomy and morphogenesis of the vascular plants, with special emphasis on the angiosperms. Two one-hour lectures, one three-hour laboratory per week. *Prerequisite:* General Botany.

BIOL. 605. Mycology

Study of the taxonomy, morphology, reproduction, physiology, ecology, and economic importance of selected groups of fungi. *Prerequisite:* General Biology. *Credit:* Four (4) semester hours. Six hours per week including laboratory.

BIOL. 607. Biometrics II

Analysis of variance with emphasis on experimental design. Analysis of covariance, bioassay, matrices, and non-parametric methods. *Prerequisite:* Biometrics or equivalent.

BIOL. 608. Molecular Genetics

Molecular basis for genetic analysis; a study of currently accepted models for DNA self-replication, RNA and protein synthesis, genetic coding and mutation. *Prerequisites:* General Genetics and Organic Chemistry.

BIOL. 610. Protozoology

Morphology, physiology, and taxonomy of the protozoa; life cycles of selected free-living and parasitic species; importance in environmental inter-relationships and significance in human problems. Four hours per week, including laboratory. *Prerequisite:* Microbiology.

BIOL. 612. Current Topics in Ecology

Lectures, seminars, and laboratory and field study relating to a currently important topic in ecology. Topics will be announced in advance. May be taken more than once. *Prerequisites:* One semester each of ecology and biometrics or the equivalent.

BIOL. 613. Enzymology

Fundamentals of enzymology. The molecular structure, chemistry and mechanism of action of enzymes. *Prerequisite:* A course in Molecular Biology or Biochemistry.

BIOL. 614. Taxonomy of Vascular Plants

Principles and techniques of vascular plant identification and classification. Major emphasis on plant families of Northeastern United States and adjacent Canada. *Prerequisites:* Genetics, Physiology and Ecology.

BIOL. 615. Advanced Bacteriology

Study of the various groups of bacteria, particularly those common in nature and affecting the health and welfare of man. Four hours per week including laboratory. *Prerequisite:* 12 Sem. Hrs. in biological sciences, including Microbiology, General Chemistry.

BIOL. 616. Topics in Animal Physiology

Special topics in animal physiology. *Prerequisites:* General Physics, Organic Chemistry, one year of physiology. Four hours per week. *Special Note:* May be taken twice since different topics will be offered.

BIOL. 617. Seminar

Investigations and discussions of topics of current interest to biologists. Topics to be announced. Two hours per week. Graduate Biology Majors may enroll

with permission of the instructor. *Special Note:* May be taken twice if different topics are planned. *Credit:* One semester hour.

BIOL. 618. Ethology

Causation, function, and biological significance of instinctive behavior and learning in animals, and their application to ecology and evolution. Three hours per week. *Prerequisite:* Three hours of psychology.

BIOL. 619. Plant Ecology

Trophic relations of plant communities in ecosystems, environmental factors influencing vegetation, theory and practice of sampling and analyzing data, and interpretation of the dynamics of pattern, distribution, and sequential development of plant communities. *Prerequisite:* A course in biometrics or statistics and a course in taxonomy of vascular plants. *Credit:* Three semester hours; two 1-hour lectures and one 3-hour laboratory or field session per week. Additional all-day field trips may be required.

BIOL. 620. Symbiology

The interactions of symbiotes at various levels and the physiologic, ecologic and genetic factors which influence these interactions. *Prerequisites:* One semester each of physiology, ecology, and genetics.

BIOL. 665. Algology

Taxonomy, ecology, morphology, ultrastructure, physiology, and economic importance of selected species of freshwater algae. *Prerequisite:* Ecology, or the equivalent. Four hours per week including laboratory.

BIOL. 690. Research Project in Biology

A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

BIOL. 695. Research Thesis in Biology

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

CHEMISTRY DEPARTMENT

Accredited by the American Chemical Society

MASTER OF ARTS IN CHEMISTRY**Prerequisites:**

1. A bachelor's degree from an accredited college or university.
2. A minimum of 24 semester hours of chemistry, including one year of physical chemistry, with a cumulative average of 2.60 on a 4.00 scale. One year of general physics and mathematics through differential and integral calculus.
3. A minimum combined score of 900 on the General Aptitude sections and a minimum score of 500 on the Advanced Chemistry section of the Graduate Record Examination.

Requirements for Master of Arts Degree:

1. A cumulative average of 3.00 on a 4.00 scale, for the courses applied toward the degree. A student receiving more than two grades of C (six semester hours) will be ineligible to receive the Master of Arts degree in chemistry.
2. Demonstrated competence in a foreign language. A computer language may be substituted in lieu of the foreign language.
3. A successful oral defense of a thesis based upon the candidate's research in chemistry.
4. *Required areas of study:*

		Credit Hours
Chemistry 604	Graduate Chemistry Seminar	1
Chemistry 605	Kinetics and Reaction Mechanisms	3
Chemistry 625	Structure Analysis I. Spectroscopic Methods	3
Chemistry 626	Structure Analysis II. Non-Spectroscopic Methods	3
Chemistry 690	Oral Defense of Thesis	2
Chemistry 695	Research Thesis in Chemistry	6

Electives under Advisement:

a. A minimum of one 600-level course	3
b. Any combination of 400, 500, and 600-level courses	9
<i>Total Requirements</i>	<u>30</u>
	35

MA

1.
2.
3.
4.
5.
6.
7.
8A.
8B.
8C.
8D.
9.
10.
11.
12.
13.
14.
15.
17.
18.
19.
21.
24.
25.
26.
27.
28.
29.
30.
31.
32.
35.
36.
37.

EDWARD H. BUTLER LIBRARY

MASTER OF SCIENCE IN SECONDARY EDUCATION — CHEMISTRY

Prerequisites

Major Area of Specialization
Also required, one year in each of the other sciences
and Differential and Integral Calculus

Required Courses

18 semester hours are required in graduate science
and mathematics courses selected by advisement.

Research: Required of all students who are candidates for the
master's degree. Each candidate, after a conference with
his adviser, must select one of the following requirements:

Sci. 595 Research Methods & Techniques in Science
Education

Chem. 690 Project

Chem. 695 Master's Thesis

Professional Education

Secondary Education Elective (Student may elect a
course in science in lieu of this requirement.)

Unrestricted Electives

Total Requirements

CHEM. 400. Inorganic Chemistry (g)

CHEM. 401. Biochemistry I (g)

CHEM. 403. Instrumental Chemistry (g)

CHEM. 405. Theoretical Chemistry (g)

CHEM. 420. Nuclear Chemistry (g)

CHEM. 430. Organic Chemistry III (g)

CHEM. 500. Chemistry: Its History,
Philosophy and Role in Society

The historical development of chemistry
as a science and an aspect of culture;
its philosophy, its technological role in
society. *Prerequisite:* One year of college
chemistry.

CHEM. 505. Chemistry for Elementary
Teachers

A discussion of general chemistry in line
with the suggested State Education De-
partment syllabus for grades K through
9; practice and performance of chemical
demonstrations.

CHEM. 507. Industrial Chemistry

The application of chemical principles
and laboratory techniques to industrial
processes, including production opera-
tions and economics. *Prerequisite:* Four
semesters of college chemistry.

CHEM. 590. Special Project

Research or investigation of a particu-
lar problem to be planned and carried
out by student, with consultation and
guidance from instructor.

CHEM. 604. Graduate Chemistry Seminar

Oral presentation and analysis of cur-
rent research from all areas of chemis-
try. *Prerequisite:* Permission of the In-
structor. *Credit:* One semester hour.

CHEM. 605. Kinetics and Reaction
Mechanisms

A study of the methods of determining
mechanisms of chemical processes. *Pre-
requisite:* Chem. 306.

CHEM. 607. Chemical Thermodynamics

Theory of chemical thermodynamics
with particular emphasis on measurable
properties, solution and phase equilibria,
phase equilibria in the critical region,
transport phenomena, statistical thermo-
dynamics, and the application of these
principles to chemical problems. *Pre-
requisite:* Chem. 306.

CHEM. 608. Quantum Chemistry

Quantum Mechanics and its application
to chemical problems. *Prerequisite:*
Chem. 306.

CHEM. 610. Special Topics in Inorganic
Chemistry

One of the following courses will be pre-
sented: Coordination chemistry; non-
aqueous solvents; the representative ele-
ments and the lanthanides; synthetic in-
organic chemistry. These topics are es-
sentially independent of each other and
the student may enroll more than once
provided he has not received prior credit
in this course for the same topics. *Pre-
requisite:* Chem. 400.

CHEM. 625. Structure Analysis I
Spectroscopic Methods

A study of the absorption and emission
of electro-magnetic radiation. *Prerequi-
site:* Chem. 306.

CHEM. 626. Structure Analysis II
Non-Spectroscopic Methods

Use of non-spectroscopic physical meth-
ods such as x-ray crystallography, polari-
metry, and mass spectrometry to eluci-
date the structures of compounds. *Pre-
requisite:* Chem. 306.

CHEM. 635. Special Topics in Organic
Chemistry

Advanced topics of a reasonably broad
nature will be discussed in some detail
with emphasis on the current state of our

knowledge. These topics are essentially
independent of each other and the stu-
dent may enroll for this course as often
as possible provided that he has not re-
ceived credit in this course for the
same topic. *Prerequisite:* Chem. 202.

CHEM. 642. Biochemistry II

Selected topics in biochemistry (e.g. bio-
energetics, cellular controls, intermediary
metabolism, origin of life, feedback,
chemical genetics). *Prerequisite:* Chem.
401.

CHEM. 660. Advanced Laboratory Techniques

Individualized laboratory technique in-
struction to prepare students for gradu-
ate research. *Prerequisite:* Chem. 403.
Credit: Three semester hours; one 1-
hour lecture and two 3-hour laboratory
periods.

CHEM. 690. Research Project in Chemistry

A study undertaken by one or more in-
dividuals on a problem of special in-
terest; must be submitted in acceptable
form according to directions given by
the Department of Chemistry.

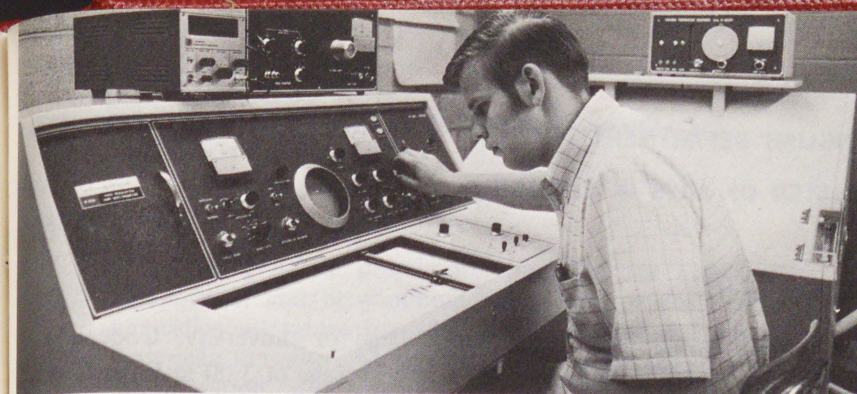
CHEM. 695. Research Thesis in Chemistry

An individual investigation of an origi-
nal problem to be submitted in type-
written form according to directions
given by the Department of Chemistry.

ECONOMICS DEPARTMENT

ECON. 502. Workshop in Economics

Considerations of economic concepts in
the curriculum; American economic
system; role of government in free enter-
prise economy; money, banking, and
credit; selected group projects in areas
of investments, labor-management re-
lations, agriculture aspects of foreign
policy, economy of the Niagara Fron-
tier, and government regulatory agencies.



ENGLISH DEPARTMENT

MASTER OF ARTS IN ENGLISH

Prerequisites

Bachelor's degree from accredited college or university. Undergraduate cumulative average of 2.75 and average of 3.00 in English on a 4.00 scale. Acceptable scores on the Graduate Record Examination. Thirty-six (36) semester hours in English exclusive of freshman English.

Language Requirement

Demonstrated competence in one foreign language. Demonstrated competence in written and oral English. These competencies must be established prior to the completion of eighteen (18) semester hours.

Required Areas of Study

Courses to be chosen, under advisement, in the following areas so that the student will have in his combined undergraduate and graduate record *at least* one course in each area.

- Linguistics or history of the English language
- Chaucer or Milton
- Shakespeare or Elizabethan writers
- Seventeenth or eighteenth century English literature
- Nineteenth century English literature
- American literature
- World literature
- Twentieth century literature
- Criticism
- Research in literature and language

Thesis

A student may elect, under advisement, English 695 Thesis (6 semester hours) or English 690 Project (4 semester hours).

Electives in English or other academic areas under advisement

Total Requirements

38

MASTER OF SCIENCE IN SECONDARY EDUCATION — ENGLISH

Prerequisites

Undergraduate preparation including six hours in composition and/or communication and preparation in linguistics, literature for adolescents, English literature, American literature, world literature, speech and/or oral interpretation, and advanced writing. Thirty-six (36) semester hours in English exclusive of freshman English.

Required English Courses

To be specified by adviser after review of the student's previous preparation.

Research

Required of all students who are candidates for the master's degree. Each candidate, after a conference with his adviser, must select one of the following:

Eng. Ed. 595	Research Design in Teaching of English	3
Eng. 694	Research in Literature and Language	3
Eng. 690	Project	3
Eng. 695	Master's Thesis	6

Professional Education

Either Ed. 545 Teaching Reading in the Secondary Schools or one course in secondary education chosen under advisement.

Unrestricted Electives

Total Requirements

All English courses are numbered according to the system explained below. Course numbers in use prior to Spring Semester, 1972, are enclosed in parentheses after each course.

CENTURY levels:

- 00-400g—Advanced courses for undergraduates and graduates (must have prerequisites; may have classification)
- 500—graduate courses (may have classification)
- 600—graduate courses (primarily for majors; others by consent)

DECADE categories:

- 00-09 Writing and Communication
- 10-19 English literature
- 20-29 (open decade)
- 30-39 World literature
- 40-49 American literature
- 50-59 Genre (e.g., poetry, fiction, drama)
- 60-69 Children's literature; Secondary School literature; English education

Credit
Hours
36

18

3-6

3-6

30

0-6

6

30

39

70-79 Linguistics
80-89 Folklore
90-99 Research: project, thesis, etc.

ENG. 402. Advanced Creative Writing:
Fiction (g)

ENG. 403. Creative Writing: Poetry (g)

ENG. 404. Studies in the Cinema (g)

ENG. 410 (400). Medieval English Literature
(g)

ENG. 411 (405). Chaucer (g)

ENG. 412 (545). Spenser (g)

ENG. 413 (409). Milton (g)

ENG. 414 (317). Sixteenth Century English
Literature (g)

ENG. 415 (411). Seventeenth Century English
Literature (g)

ENG. 416 (426). Eighteenth Century English
Literature (g)

ENG. 417 (402). English Novel to 1800 (g)

ENG. 418 (406). English Novel: 1800-1900
(g)

ENG. 419 (307). Romantic Movement in
English Literature (g)

ENG. 420 (422/423). Early Victorian
Literature (g)

ENG. 421 (422/423). Later Victorian
Literature (g)

ENG. 422 (314). James Joyce and His
Contemporaries (g)

ENG. 430 (401). Literature of the Bible (g)

ENG. 432 (441). Comparative Drama:
Tragedy (g)

ENG. 439 (415). Philosophy in Literature (g)

ENG. 440 (450). Colonial American
Literature (g)

ENG. 441 (212). Romantic Movement in
American Literature (g)

ENG. 442 (404). American Novel to 1900 (g)

ENG. 450. Studies in Poetry

ENG. 451. Studies in Fiction

ENG. 452. Studies in Drama

ENG. 453. Studies in Individual Writers

ENG. 454 (407). The Novel in English:
1900-1945 (g)

ENG. 455 (407). The Novel in English since
1945 (g)

ENG. 456 (211). Poetry in English:
1900-1945 (g)

ENG. 457 (211). Poetry in English since
1945 (g)

ENG. 458 (505). Seventeenth and Eighteenth
Century English Drama (g)

ENG. 459 (403). The World Novel (g)

ENG. 460 (455). Children's Literature and
Mass Media (g)

ENG. 461 (607). Young Adult Literature (g)

ENG. 470 (427). Foundations of Language
(g)

ENG. 471 (609). History of the English
Language (g)

ENG. 472 (610). English Grammars (g)

ENG. 474 (428). Speech Differences in
American Society (g)

ENG. 475 (000). Old English Language and
Literature (g)

ENG. 480 (564). Major Genres of Folklore (g)

ENG. 491 (413). Study-Tour: American
Literature (g)

ENG. 492 (416). Study-Tour: Western Europe
(g)

ENG. 500. The Teaching of Writing

An advanced course in the teaching of writing discussing: the philosophical, psychological, and sociological foundations needed to teach writing; the relation of forms of thinking, rhetoric, and communication theory to writing; the management of a writing program; and an introduction to research in the teaching of writing. *Prerequisite:* A course in advanced writing, creative writing, journalism, or the permission of the instructor.

ENG. 511 (504). Origin and Development of
English Drama

Liturgical beginnings of English drama; miracle and morality plays, interludes; rise of English comedy and tragedy; fore-runners and contemporaries of Shakespeare.

ENG. 515 (523). Shakespeare: The Comedies
Principal comedies from *Love's Labour's Lost* to *The Tempest*; backgrounds of Elizabethan comedy; Shakespeare's early, experimental work; later mature achievement and the comic idea in farce, high comedy, bitter comedy, and romance.

ENG. 516 (520). Shakespeare: The Tragedies
Backgrounds of Elizabethan tragedy; study of the aesthetic and philosophic qualities of the major tragedies; readings in criticism.

ENG. 520 (430). Irish Literature
Gaelic prose and poetry in translation; Irish contributions to literature in English; the poetry of Yeats, the plays of Synge, the 1916 poets, the Blasket writers, and other Irish literature since 1889.

ENG. 530 (508). Literature of Greece and
Rome

Readings in English translation and discussion of selected masterpieces; relationship to later literature in English and other modern languages.

ENG. 531 (533). Literature of Continental
Europe: The Middle Ages

Readings in English translation of representative works of the Middle Ages; importance of this literature as source material for later writers.

ENG. 532 (534). Literature of Continental
Europe: The Renaissance

Petrarch, Boccaccio, Machiavelli, Castiglione, Ariosto, and others in English translation; their relation to the literature of England.

ENG. 533 (532). Literature of Continental
Europe: Seventeenth and
Eighteenth Centuries

Readings in English translation of selected novels, plays, and essays illustrating neo-classical and pre-revolutionary tendencies in France, Germany, and other European countries.

ENG. 534 (535). Literature of Continental
Europe: The Nineteenth
Century

Readings in English translation of selected masterpieces; Rousseau and his disciples; romantic poetry, fiction, and drama; realism, naturalism, symbolism in the various types of literature.

ENG. 535 (536). Literature of Continental
Europe: The Twentieth
Century

Trends in continental literature from the turn of the century to Post World War

II. Particular attention to French, German, Italian, and Russian works in translation.

ENG. 538 (519). Literature and the World
Today

Current ideas expressed through novels, plays, and critical reports; contribution of the magazine, newspaper and motion picture to the image of America. *Classification:* Not open to English majors.

ENG. 540 (503). Regional American
Literature

Literature of certain geographical and cultural areas of the United States: New England and Eastern, Southern, Western; folkways in American letters; local color and use of regional materials, particularly in fiction.

ENG. 545 (510). Emerson and Thoreau

Writings of Emerson and Thoreau against the background of European and American transcendentalism.

ENG. 546 (518). Major American Poets

Nineteenth century poets of first rank and their contributions to a national literature.

ENG. 560 (514). Studies in Children's
Literature

Types of children's literature; criteria of book selection; reading interests of children; preparation of bibliography. May not be taken for credit by students who have taken Eng. 260.

ENG. 561 (551). The Heroic Tradition in
Children's Literature

Traditional heroic works of literature as they have been interpreted for children. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 562 (552). Historical Background of
Children's Literature

Historical survey of children's literature and of the writers, illustrators, and social forces which have shaped it. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 563 (553). Classics of Children's
Literature

Study in depth of several literary classics in children's literature. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 564 (554). Fantasy and the Modern Literary Fairy Tale

Survey and evaluation of the significant writers of fantasy for children from Hans Christian Andersen to the present. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 565 (555). Realistic Fiction for Children
Realistic fiction; regionalism, ethnic and religious groups, children of other lands. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 566 (557). Poetry for Children
Adult poetry of interest to children; poetry written specifically for children. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 567 (558). Biography and Historical Literature for Children
Selected writings in biography and historical fiction for children. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 568 (559). Folklore in Children's Literature
A critical analysis of the traditional elements in children's literature. *Prerequisite:* Eng. 260 or Eng. 560.

ENG. 573 (600). Applied Linguistics
The practical application of linguistic concepts and research to educational problems in our society. *Prerequisite:* Eng. 270 or Eng. 470g.

ENG. 581 (562). Folklore and Literature
Uses of folklore, in terms of both content and style, in major literary works and periods, with emphasis on English and American literature. *Prerequisite:* Twelve hours of undergraduate or graduate courses in literature.

ENG. 582 (561). Folklore and History
Relationships between history and oral tradition; folklore as an aspect of area and social studies in history; contributions of historians to folklore. *Prerequisite:* Twelve hours of undergraduate or graduate courses in literature.

ENG. 583 (563). British Folklore
Collection and research in English, Scottish, and Irish folk traditions, with emphasis on developmental work in the nineteenth and twentieth centuries; relationship between British and American folklore scholarship. *Prerequisite:* Twelve

hours of undergraduate or graduate courses in literature and an introductory course in folklore.

ENG. 584 (623). The Folk Ballad
Study of the folk ballad through the canon of *The English and Scottish Popular Ballads*; relationships with Scandinavian and other European forms; brief examination of broadsides and other semi-traditional forms. *Prerequisite:* Twelve hours of undergraduate or graduate courses in literature.

ENG. 585 (620). Anglo-American Folk Lyric
Study of the forms of folksong other than narrative forms; lyric, game and play-party, religious; and examination of both content and form, as well as manner of performance. *Prerequisite:* Nine hours of undergraduate or graduate courses in literature and six hours of courses in folklore.

ENG. 586 (622). The Folktale and Other Traditional Narrative Forms
Different forms of narrative folklore; history of folktale studies; scholarly tools of folk narrative research and their use. *Prerequisite:* Twelve hours of undergraduate or graduate courses in literature and six hours of courses in folklore.

ENG. ED. 595. Research Design in the Teaching of English
An introductory course to research in the teaching of English, designed to help the student develop a thesis proposal for an experimental study of a problem in the teaching of English. *Prerequisite:* Permission of the instructor.

ENG. 610 (631). Studies in Medieval English Literature
Selected period, genre, or writer of medieval literature. May include Old English; medieval romance, drama, or alliterative poetry; or Chaucer, the Gawain-poet, Malory, or Langland.

ENG. 613 (613). Studies in Seventeenth Century English Literature
Selected authors, forms, or literary movements.

ENG. 614 (614). Studies in Eighteenth Century English Literature
Selected authors, forms, or literary movements.

ENG. 615 (615). Studies in Nineteenth Century English Literature
Selected authors, forms, or literary movements.

ENG. 618 (521). Studies in Modern English Poetry
Significant trends and writers in English poetry since 1900; close study of two or three writers from the following list: Hardy, Housman, de la Mare, Masfield, Eliot, Auden, and Thomas.

ENG. 620 (602). Literary Criticism
Examination of primarily the theoretical and, secondarily, the practical bases of critical analysis and evaluation of literature.

ENG. 631 (531). Studies in Comparative Romanticism
Nature of Romanticism; historical backgrounds of nineteenth century English and American Romanticism; Continental Romanticism; study of a limited number of English and American writers such as Wordsworth, Byron, Shelley, Hawthorne, Poe.

ENG. 633 (630). Seminar in Comedy
Practice and theory of comedy from Aristophanes to the present.

ENG. 634 (635). The Symbolist Poets: A Comparative Study
The symbolist movement in America and Europe, with emphasis upon such writers as Wallace Stevens, W. B. Yeats, Charles Baudelaire, Arthur Rimbaud, Paul Verlaine, Stephane Mallarme, Rainer Maria Rilke, and Frederico Garcia Lorca.

ENG. 640 (502). Studies in American Literature
Selected aspects of literary culture in the United States from the Colonial period to the twentieth century. Literary movements and periods, intercultural relationships, and the influence of religious and philosophic areas upon literature; focus upon selected areas and key figures.

ENG. 648 (522). Studies in Modern American Poetry
Significant trends and figures in American poetry since 1912; close study of two or three writers from the following list: Robinson, Frost, Stevens, Jeffers, Millay, Cummings, Benet, Crane, Nicholl, and Lowell.

ENG. 650 (506). Studies in Drama: Ibsen to 1945
Selected emphasis from Naturalism, Symbolism, Expressionism, and Lyric Theater, and such writers as Ibsen, Strindberg, Chekhov, Shaw, O'Neill, Pirandello, and Brecht.

ENG. 651 (506). Studies in Drama since 1945
Selected emphasis from realistic, surrealist, absurdist, and ritual drama, and such writers as Duerrenmatt, Frisch, Miller, Genet, Ionesco, Beckett, Albee, and Pinter.

ENG. 680 (626). Folklore and Culture
Relationships between folklore and cultural studies, with emphasis on the American and British anthropological schools. *Prerequisite:* Three hours in folklore or anthropology.

ENG. 681 (625). Folklore Theory
Examination and discussion of the major theories of folklore studies. *Prerequisite:* Nine hours of graduate courses in folklore.

ENG. 682 (624). Folklore Field Work
Practical experience in the field collection of folklore, with coordinated discussion of problems and techniques; evaluation and annotation of collected materials, leading to presentation in potentially publishable form. *Prerequisite:* Nine hours of graduate courses in folklore.

ENG. 690 (690). Project
Study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

ENG. 691 (621). Research Problems in Folklore
Intensive study of a particular area of research in folklore, approved by the graduate committee and carried out under the direction of an adviser. *Prerequisite:* Fifteen hours of graduate courses in folklore.

ENG. 694 (694). Research in Literature and Language
Examination of basic problems that arise in research; some attention to bibliographical resources and to the preparation

of a manuscript according to the MLA Style Sheet. *Note:* It is recommended that this course be taken early in the student's graduate program.

ENG. 695 (695). Thesis

An individual investigation of an original problem to be submitted according to directions given by the Graduate Office.

FOREIGN LANGUAGE DEPARTMENT

- F.L. 461. Language Teaching Workshop I (g)
 F.L. 462. Language Teaching Workshop II (g)
 F.L. 478. Methods of Teaching English as a Second Language (g)
 FR. 401. Classical French Drama (g)
 FR. 403. Nineteenth Century French Novel (g)
 FR. 404. Contemporary French Novel (g)
 FR. 407. The French Enlightenment (g)
 FR. 408. Contemporary French Theater (g)
 FR. 409. Nineteenth Century French Drama (g)
 FR. 410. Nineteenth Century French Poetry (g)
 FR. 415. Advanced Grammar and Composition (g)
 FR. 416. Advanced Conversation and Composition (g)
 FR. 421. Structure of Modern French (g)
 FR. 430. French Renaissance (g)
 FR. 442. The Fable in France (g)
 FR. 450. Directed Readings I (g)
 FR. 451. Directed Readings II (g)
 FR. 496. Senior Seminar I (g)
 FR. 497. Senior Seminar II (g)
 GERM. 401. Twentieth Century German Literature (g)
 GERM. 450. Directed Readings I (g)
 GERM. 451. Directed Readings II (g)
 ITAL. 401. Dante's *Divina Commedia* (g)
 ITAL. 403. Italian Renaissance Prose (g)
 ITAL. 406. Nineteenth Century Italian Literature (g)
 ITAL. 408. Contemporary Italian Literature: Poetry and Theater (g)
 ITAL. 410. Contemporary Italian Literature: Novel, Short Story and Essay (g)
 ITAL. 450. Directed Readings I (g)
 ITAL. 451. Directed Readings II (g)

- POL. 431. Polish Literature in English Translation (g)
 POL. 432. Modern Polish Literature in English Translation (g)
 SPAN. 400. Medieval Spanish Literature (g)
 SPAN. 402. Spanish Drama of the Golden Age (g)
 SPAN. 404. Cervantes (g)
 SPAN. 406. Nineteenth Century Spanish Literature (g)
 SPAN. 408. Twentieth Century Spanish Literature: Poetry and Theater (g)
 SPAN. 409. Twentieth Century Spanish Literature: Novel, Short Story and Essay (g)
 SPAN. 411. Spanish American Literature of the 19th and 20th Centuries: Novel, Short Story and Essay (g)
 SPAN. 412. Spanish American Literature of the 19th and 20th Centuries: Theater and Poetry (g)
 SPAN. 415. Advanced Grammar and Composition (g)
 SPAN. 421. Structure of Modern Spanish (g)
 SPAN. 450. Directed Readings I (g)
 SPAN. 451. Directed Readings II (g)
 SPAN. 496. Senior Seminar I (g)
 SPAN. 497. Senior Seminar II (g)
 F.L. ED. 510. Supervision of Foreign Language Student Teachers
 A course open to teachers of foreign languages interested in supervising F.L. student teachers. An opportunity to explore the best techniques for student teacher supervision and evaluation in urban and suburban schools at all levels. *Prerequisite:* at least a B.A. or B.S. degree in Foreign Languages or Foreign Language Education or approval of the instructor.
 FR. 501. Seminar in French Literature
 Selected topics in French literature of the different periods.
 FR. 502. Advanced French Composition
 Further guidance and practice in the acquisition of a good French style of writing, the selected stylistic examples from major contemporary French authors. Frequent written assignments in French.

FR. 503. **The New Novel in France**
 Reading and extensive discussion of representative novels of authors of the "nouvelle vague" (Robbe-Grillet, Butor, Sarraute, Duras, etc.). Frequent oral and written reports.

ITAL. 502. **Advanced Italian Composition**
 Further guidance and practice in the acquisition of a good Italian style of writing, the selected stylistic examples from major contemporary Italian authors.

ITAL. 504. **Readings in Italian Literature**
 Selected topics in Italian literature of the different periods.

SPAN. 501. **Seminar in Spanish Literature**
 Selected topics in Spanish literature of the different periods.

SPAN. 502. **Seminar in Latin American Literature**
 Selected topics in Latin American Literature of the different periods.

SPAN. 503. **Advanced Spanish Composition**
 Advanced theory in stylistics and intensive written practice designed to help students acquire a good style in writing Spanish.

SPAN. 504. **Seminar in Spanish Linguistics**
 Selected topics taken from: history of the Spanish language, Spanish Peninsular and Spanish American dialects, Romance linguistics and Romance structures, etc.

SPAN. 505. **The Latin American Novel of Today**
 Representative novels from prominent Latin American authors of the present day, such as Asturias, Carpentier, Rulfo, Cortázar, García Márquez, Vargas Llosa, illustrative of literary, social and political developments in the hemisphere.

F.L. 590. **Special Project**
 Research or investigation of a particular problem, to be planned and carried out with guidance of instructor.



GENERAL SCIENCE DEPARTMENT

MASTER OF SCIENCE IN SECONDARY EDUCATION — GENERAL SCIENCE

	Credit Hours
Prerequisites	36
Must include one year in each of the sciences and in mathematics.	
Required Courses	18
18 semester hours are required in graduate science and mathematics courses selected by advisement.	
Research: Required of all students who are candidates for the master's degree. Each candidate, after a conference with his adviser, must select one of the following requirements:	
Sci. 595. Research Methods & Techniques in Science Education	3
Sci. 690. Project	3
Sci. 695. Master's Thesis	6
Science Education	3
Science 528, Seminar in Science Education	
Unrestricted Electives	6
<i>Total Requirements</i>	30

- SCI. 409. History of Science (g)
- SCI. 410. Science in the Elementary School Curriculum (g)
- SCI. 415. Basic Science of Radiation and Radioisotopes (g)
- SCI. 422. Development of the Scientific Method (g)
- SCI. 521. Laboratory Techniques for Elementary School Teachers
- Appropriate laboratory exercises designed to acquaint the elementary teacher with the subject matter, laboratory equipment and techniques necessary to effectively introduce the new Elementary Science Programs.
- SCI. 523. Science in Transportation
- The science needed to understand various methods of transportation, including the science involved in such problems as safety, comfort, and governmental aid and regulation.

- SCI. 527. Current Research in Science
- Study of current research in the various sciences; implications of such research for present and future living; implications of research in science for the secondary school science curriculum. *Prerequisite:* Six semester hours in each of two sciences.
- SCI. 528. Seminar in Science Education
- Current trends in science education in the public schools; recent research in science education; problems of individual students. *Prerequisite:* Two years experience teaching science as a special subject.
- SCI. 529. Advance Seminar in Science Education
- An in depth exploration of problems and research in science education in areas selected by the students. *Prerequisites:* Sci. 528 or permission of the instructor.

SCI. 530. Curricular Trends in Science Teaching

An examination of recent curriculum developments through a study of philosophies, objectives, and materials; current understandings of the psychology of inquiry; historical events leading to changes in curriculum. *Prerequisites:* One year of teaching science as a subject, or assignment in an administrative position having responsibility for science curriculum, or permission of the instructor.

SCI. 535. Current Literature in Science Education

Study of current literature in science education and related areas. *Prerequisites:* Sci. 528 and Ed. 595, or permission of the instructor.

SCI. 590. Special Project

Research or investigation of a particular problem to be planned and carried out by

the student, with consultation and guidance from instructor.

SCI. 595. Research Methods and Techniques in Science Education

Nature of Educational Research; Problem Analysis; Descriptive and Inferential Statistics; Experimental Design; Strategy of Historical, Descriptive and Experimental Studies. Computer Library programs will be used in statistical tests performed.

SCI. 690. Project

A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

SCI. 695. Thesis

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

GEOGRAPHY DEPARTMENT

GEOG. 408. Agricultural Geography (g)

GEOG. 409. Geography of Manufacturing and Service Industries (g)

GEOG. 410. Resource Use and Urban Planning (g)

GEOG. 500. Geography of Eastern Asia

Physical and cultural geography of China, Japan, Korea, Mongolia, and the countries of southeast Asia; emphasis on the major economies and their relationships to the natural environment.

GEOG. 501. Studies in Industrial Geography

Study of man's major occupations and their relationships to the natural environment; emphasis on selected topics in agriculture, manufacturing, and mining that are of world-wide significance.

GEOG. 502. Geography in the Secondary Schools

Methods and techniques of teaching geography in the secondary schools with emphasis on the 9th grade level; elements of the natural and cultural environments that should be emphasized in secondary school geography; and the general geography of Eastern Asia, South and Southeast Asia, and Subsaharan Africa.

GEOG. 503. Studies in Resource Conservation

Principles of natural resources conservation; select problems in resource conservation, soil erosion, water pollution, destruction of forests, grasslands, and wildlife, flood control, and depletion of minerals; emphasis on conservation in the United States and New York State.

GEOG. 504. Studies in the Geography of Anglo-America

Regional divisions: landforms, climates, soils, natural vegetation, drainage, major economies; emphasis on the leading economies of each region and their relationships to the natural environment.

GEOG. 505. Studies in the Geography of Middle America

The physical and cultural geography of Mexico, Central America, and the West Indies with emphasis on the problems man has encountered in his attempts to adjust to the natural environment.

GEOG. 507. Map Reading and Analysis

Map essentials; types of maps and symbols; techniques of map interpretation; classification and use of map projections; map collections.

GEOG. 508. Studies in the Geography of New York State

The physical landscape; cultural geography and settlement; primary economic activities; urban systems and environments; planning and future development of the state.

GEOG. 510. Cultural Geography

Scope and nature of cultural geography; growth and development of cultural regions; investigations into the ideas of culture, culture area, cultural landscape, cultural history, cultural ecology and cultural perception.

GEOG. 550. Studies in Climatology

Studies of climate classification systems; world macro-climatic regions; applied urban and non-urban aspects of energy and moisture balance micro-climatology. *Prerequisites:* Physical Geography or Meteorology.

GEOG. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

GEOG. 601. Seminar in Urban-Metropolitan Area Problems

Spatial aspects of urban-metropolitan area problems; urban land use; dynamics of change in urban areas; role of urban geography in finding solutions to urban problems. *Prerequisites:* Six hours of geography or three hours of urban sociology or urban affairs studies.

GEOG. 610. Seminar

Investigation, examination and discussion of topics of current interest in geography. Topics to be announced. *Prerequisites:* Twelve (12) hours of geography or permission of the instructor.

GEOSCIENCES DEPARTMENT

MASTER OF SCIENCE IN SECONDARY EDUCATION — GEOSCIENCES

Prerequisites

Major Area of Specialization
Also required, one year in each of the other sciences and in mathematics.

Required Courses

18 semester hours are required in graduate science and mathematics courses selected by advisement.

Research:

Required of all students who are candidates for the master's degree. Each candidate, after a conference with his adviser, must select one of the following requirements:

- Sci. 595 Research Methods & Techniques in Science Education
Geos. 690 Project
Geos. 695 Master's Thesis

Professional Education

Secondary Education Elective (Student may elect a course in science in lieu of this requirement.)

Unrestricted Electives

Total requirements

Credit
Hours
48
24

18

3

3

6

3

6

30

GEOS. 401. Petrology (g)

GEOS. 402. Structural Geology (g)

GEOS. 403. Glacial Geology (g)

GEOS. 404. Field Geology (g)

GEOS. 405. Geology of North America (g)

GEOS. 406. Geology of New York State (g)

GEOS. 407. Advanced Invertebrate Paleontology (g)

GEOS. 408. Vertebrate Evolution (g)

GEOS. 409. Tectonics and Earth History (g)

GEOS. 411. Advanced Oceanography (g)

GEOS. 430. Stellar and Galactic Astronomy (g)

GEOS. 431. Planetarium Seminar (g)

GEOS. 435. Methods of Observational Astronomy (g)

GEOS. 439. Astronomy and Cosmology (g)

GEOS. 461. Geophysics (g)

GEOS. 493. Interdisciplinary Earth Science (g)

GEOS. 501. Petrography

Microscopic study of igneous, sedimentary, and metamorphic rocks; textures and their interpretation; classification of rocks. *Prerequisite:* Geos. 401.

GEOS. 504. Field Investigations for Earth Science Teachers

Planning field investigations for use in secondary teaching; considers investigations which can be accomplished in the immediate school vicinity as well as those which require a full day and travel. *Prerequisite:* prior experience or assignment to teach a secondary science course.

GEOS. 511. Marine Geology

Descriptive and analytical approach to the sedimentation, stratigraphy, and structure of the ocean basins. *Prerequisite:* Geos. 411 or equivalent.

GEOS. 535. Astronomy for Earth Science Teachers

The dynamic universe: solar system, stars, galaxies and quasars. Night sky and planetarium observation. *Prerequisite:*

Prior experience or assignment to a secondary science course.

GEOS. 541. Meteorology for Earth Science Teachers

A study of weather as a response to the unequal distribution of energy from the sun. Individualized to begin at the level of the student. Includes data collecting techniques, interpretation and predictions appropriate for secondary classes. *Prerequisite:* prior experience or assignment to a secondary science course.

GEOS. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by a student, with consultation and guidance from instructor.

GEOS. 601. Economic Geology

Origin, composition, alteration, and enrichment of ores; origin of fossil fuels and other non-metalliferous deposits; conservation of geologic resources. *Prerequisite:* 4 semesters of geosciences and 1 year of chemistry. Occasional field trips.

GEOS. 603. Advanced General Geology

Current topics and recent literature involving geological research. *Prerequisite:* 4 semesters of geosciences. Lecture and laboratory; occasional field trips.

GEOS. 605. Geosciences Seminar

Readings, reports, and discussion of current geoscience problems and research. *Prerequisite:* 6 semester of geosciences. Lecture and laboratory; occasional field trips.

GEOS. 690. Research Project in Geosciences

A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

GEOS. 695. Research Thesis in Geosciences

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

MA

1.
2.
3.
4.
5.
6.
7.
8A
8B
8C
8D
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
21.
22.
23.
24.
25.
26.
27.
28.
29.
30.
31.
32.
33.
34.
35.
36.
37.

HISTORY DEPARTMENT

MASTER OF ARTS IN HISTORY

Program

The Master of Arts Degree in history is offered in three areas: American history; East European history and European history.

Prerequisites

Bachelor's degree from accredited college or university. Undergraduate cumulative average of 2.75 on 4.00 scale and average of 3.00 in History. Acceptable scores on the Graduate Record Examination, including the advanced examination in History. Thirty (30) semester hours in History.

Language Requirement

Demonstrated competence in one foreign language, through examination by the department. This competency must be established prior to the completion of eighteen (18) semester hours.

Required Courses

Courses to be chosen, under advisement, in American, European, or World History. Six (6) hours may be taken in related fields, such as Political Science, Geography, English, etc. with the expressed approval of the student's adviser.

Seminars

Students working for a degree in American History should elect History 600 and History 609 or History 611.

Students working for a degree in European History should elect History 601 and History 602, History 603, or History 610.

Thesis

Written Comprehensive Examination in two fields selected by student with consent of adviser — administered by the department.

Total requirements

HIST. 400. Twentieth Century European Diplomacy (g)

HIST. 401. American Expansion Since 1783 (g)

HIST. 402. History of the Soviet Union (g)

HIST. 403. American Diplomatic History to 1898 (g)

HIST. 404. The South, Sectionalism, and the Civil War (g)

HIST. 405. The Renaissance and Reformation (g)

HIST. 406. The French Revolution and Napoleon (g)

HIST. 407. Germany Since 1871 (g)

Credit
Hours

30

18

6

6

30

HIST. 408. History of American Thought (g)

HIST. 410. American Labor History (g)

HIST. 411. Social and Intellectual History of Latin America (g)

HIST. 412. History of East Central Europe (g)

HIST. 414. History of the Balkans Since 1453 (g)

HIST. 415. History of Spain to 1815 (g)

HIST. 416. Seminar in Principles and Techniques of Operating an Historical Agency (g)

HIST. 417. American Diplomatic History Since 1898 (g)

HIST. 418. The History Museum and Its Presentation of History (g)

HIST. 419. Seminar in Curatorship (g)

HIST. 420. Seminar in the Administration of the Historical Agency or Museum (g)

HIST. 421. American Negro History (g)

HIST. 423. History of the Byzantine Empire (g)

HIST. 425. Medieval Slavic History (g)

HIST. 430. New Nation (g)

HIST. 500. Studies in Twentieth Century American History

Aspects of American life since 1900; significant trends, policies, and ideas in politics, diplomacy, and national culture; topics for study dictated by student needs and interests.

HIST. 501. Studies in Twentieth Century European History

Study of a central theme selected by instructor and class, such as: modern political ideologies; international relations; individual country, region or period.

HIST. 502. The United States and Its Inter-American Relations

American policies toward the Latin American Republics and the Dominion of Canada; recognition; Monroe Doctrine; imperialism; peaceful settlement; cultural interchange; hemisphere security; regionalism.

HIST. 503. Social and Intellectual History of the United States

Social roots of systems of thought; effect of ideas upon American society; continuing patterns of thought, such as

Puritanism, liberalism, democracy; contributions of intellectual leaders.

HIST. 504. History of the American Frontier
Westward movement of settlement in terms of trader-trapper, farmer, cattle and mining frontiers; analysis of myth and interpretations, with emphasis upon the edenic and heroic conceptions in contemporary accounts, both fiction and non-fiction.

HIST. 505. Studies in American Colonial History

Comparison of colonial policies pursued by European powers in the New World; modification in a new environment of such transplanted elements as the family, church, schools, economy, and government.

HIST. 506. Problems in British History

An examination of major constitutional, political, social and intellectual factors which shaped England during one of the following periods: (1) Medieval England; (2) Tudor Stuart; (3) eighteenth century; (4) Victorian; (5) twentieth century.

HIST. 507. The United States in Contemporary World Affairs

United States foreign policy; United States and the United Nations; Atlantic and Pacific commitments; internal problems such as defense, production, inflation, and taxation.

HIST. 508. Reform and Reformers in American Civilization

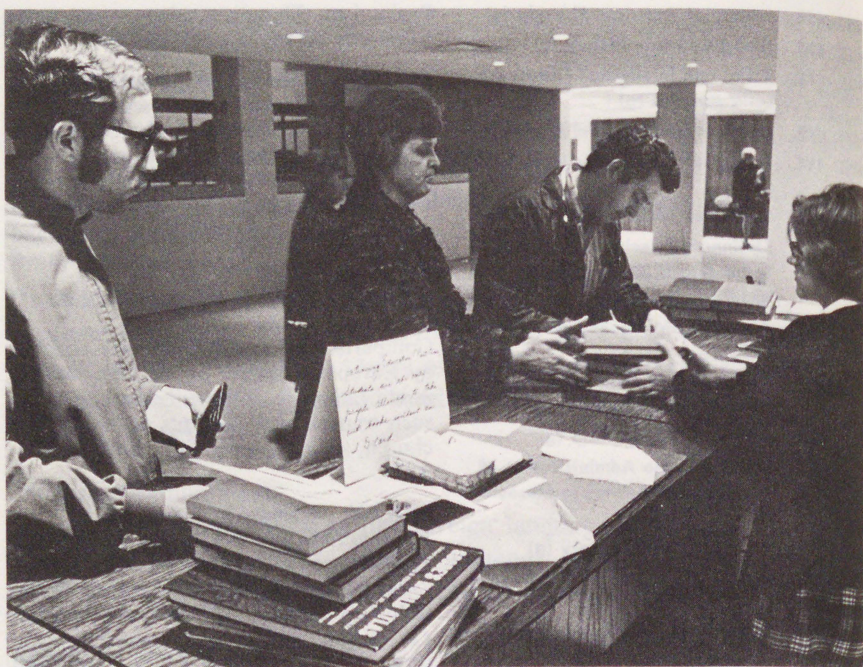
Economic and social milieu creating need for reform; personality characteristics of reform leaders; structure and operations of reform movements; selected reform movements and periods of widely-sponsored reform sentiment; changes wrought in American society.

HIST. 509. History of Russian Diplomacy

Problems of Russian and Soviet foreign policy, with special emphasis on the post-revolutionary period.

HIST. 600. Seminar in the Bibliography of American History

Sources, monographs and general histories in the bibliography of American history; collections of historical materials; historical organizations and services; analysis of selected topics and authors.



HIST. 601. Seminar in the Bibliography of European History

Sources, monographs, and general histories in the historical bibliography of selected European countries; collections of historical materials; historical organizations; problems of research; analysis of selected topics and authors.

HIST. 602. Seminar in Modern Russian History

Research in the problems of the Soviet Union, from the establishment of Marxism on Russian soil to the present, emphasizing ideological problems and Russian foreign policy, particularly toward Europe.

HIST. 603. Seminar in Modern East Central European History

Research in the problems of the nations located between Russia and Germany, and between the Baltic Sea and Turkey, from the middle of the nineteenth century to the present with special emphasis on ideological conflicts and foreign policy.

HIST. 609. Local History: Research Methods and Techniques

Preparation of individual research papers

on some undeveloped aspect of local history; guidance in historical research and writing techniques.

HIST. 610. Seminar in Contemporary European History

Problems of Contemporary Europe from the unification of Italy and Germany to the present; nationalism, imperialism and communism; the struggle for domination of Europe after World War I and World War II.

HIST. 611. Seminar in American History

Problems in American social, intellectual, or diplomatic history as determined by student needs and staff; historical methodology, the philosophy of history and historical writing; individual projects and seminar discussion.

HIST. 695. Thesis

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

LATIN AMERICAN STUDIES

L.A.S. 410. Twentieth Century Latin American Problems (g)

MATHEMATICS DEPARTMENT

MASTER OF ARTS IN MATHEMATICS

Prerequisites:

1. Bachelor's degree from accredited college or university.
2. Completion of at least 24 semester hours of undergraduate mathematics beyond calculus, including a full year of algebra (our present Math. 301, 302); a semester of analysis (our present Math. 417); and at least one semester of geometry or topology (our present Math. 222 or 471).
3. An average of 2.5 or better on a 4 point grading scale in undergraduate mathematics.
4. Written acceptance as a graduate student in the M.A. program by the Graduate Faculty of the Mathematics Department and the Director of Graduate Studies.
5. A student deficient in item 2 above may remove the deficiency while pursuing graduate study. This can be done only upon a written statement from the student's advisor or the Graduate Faculty of the Mathematics Department. The statement will indicate what deficiency is to be removed and specifically how.

Each student in the M.A. program must complete the Graduate Record Examination by the time he has completed 9 semester hours of graduate study.

Requirements for Master of Arts Degree:

The student must complete successfully the requirements listed in (a) and either (b) or (c).

a. A student must complete:

- (1) 6 hours of study in algebra to include Math. 701 and any of the courses Math. 603, 651 and 702.
- (2) 6 hours of study in analysis to include Math. 411 and any of the courses Math. 418g, 613, 615.
- (3) 6 hours of geometry or topology to include Math. 471 and any of the courses 621, 672.

A student who has completed a semester of Introduction to Complex Variables (Math. 411) and/or Topology (Math. 471) before entering this program will be considered to have met those course requirements.

b. 30 semester hours of graduate mathematics and a comprehensive examination in mathematics. A student may elect up to 6 semester hours of graduate work in related fields in lieu of the same number of semester hours of the required mathematics upon the written approval of his advisor.

c. 24 semester hours of graduate mathematics, and a thesis in mathematics for 6 semester hours and a comprehensive examination in mathematics.

No more than 9 semester hours of 400 level course work may be applied towards the degree.

MASTER OF SCIENCE IN SECONDARY EDUCATION — MATHEMATICS

Prerequisites

1. Completion of at least 18 semester hours of undergraduate mathematics beyond calculus, including one semester of algebra (our present Math. 301, 303), a semester of analysis (our present Math. 417), at least one semester of geometry (our present Math. 222, 323), and at least one semester of statistics, topology or applied mathematics (our present Math. 381, 382, 471, 413 or 415).
2. An average of 2.3 on a 4.0 scale in all undergraduate mathematics courses.
3. Acceptance as a graduate student by the Chairman of the Graduate Faculty of the Mathematics Department and the Director of Graduate Study.
4. A limited deficiency in item 1 above may be removed while pursuing graduate study with a written statement from the student's advisor or the Chairman of the Graduate Faculty of the Mathematics Department. A copy of this statement will be filed in the mathematics office and with the graduate office. A student with a deficiency in item 2 above may be asked to take the Advanced Mathematics Section of the Graduate Record Examination as possible alternate to this requirement.

Courses taken to remove a prerequisite deficiency will carry graduate credit only if approved by the Graduate Faculty. No student may apply more than 9 semester hours of 400 level courses towards this degree.

To be admitted to candidacy a student must have completed the Graduate Record Examination.

Required Courses

At least one course from each of the following categories and at least two from two of these categories:

1. *Algebra*
603, 651, 701, 702
2. *Analysis*
411, 413, 415, 418, 461, 613, 615
3. *Geometry/Topology*
471, 621, 672
4. *Miscellaneous*
431, 432, 435, 611, 631, 681, 683, 685, 686, 696, 731, 732, 735

Research

Required of all students who are candidates for the Master of Science degree. Each candidate, after conference with his adviser, must select one of the following requirements:

Math. Ed. 595	Research Methods & Techniques in Mathematics Education	3
Math. 690	Project	3
Math. 795	Master's Thesis	6
Unrestricted Electives		6
Total Requirements		30

A 2.7 average is required in all graduate mathematics taken at this campus or transferred towards a degree. Satisfaction of these requirements will be verified by the Graduate Faculty of the Mathematics Department.

MATH. 411.	Intro. to Complex Variables (g)	fields; matrices. <i>Prerequisite:</i> Math. 121 and 122 or equivalents.
MATH. 413.	Applied Analysis (g)	
MATH. 415.	Mathematical Methods in Applied Mathematics (g)	
MATH. 417.	Introduction to Real Analysis I (g)	
MATH. 418.	Introduction to Real Analysis II (g)	
MATH. 431.	Mathematical Logic (g)	
MATH. 432.	Mathematical Logic (g)	
MATH. 435.	Theory of Recursive Functions and Effective Computability	
MATH. 461.	Numerical Analysis (g)	
MATH. 471.	Topology (g)	

The above mathematics courses at the 400 level may be taken for graduate credit providing no such course work duplicates work completed for undergraduate credit. (See further restrictions under Master of Science in Education and Master of Arts Degree requirements.)

The 500 level courses are, in general, for students in elementary or exceptional children education or electives.

All 600 level courses and 700 level courses are, in general, designed for students earning degrees in mathematics or science or students with a concentration in mathematics.

(See prerequisites for each course with course descriptions.)

MATH. 501.	Mathematics for Elementary Teachers: Selected Topics from Modern Algebra	
Equivalence; congruences; Boolean algebra; groups, rings, integral domain and		
MATH. ED. 595.	Research Methods and Techniques in Mathematics Education	
Nature of Educational Research; Problem		

MATH. 521. *Mathematics for Elementary Teachers: Geometry*
Formal and informal geometry; non-metric geometry; congruence; measurement; constructions; similarity, coordinate geometry; trigonometric functions, constructions.

MATH. 551. *Mathematics for Elementary Teachers: Number Systems*
Systems of numeration; sets; whole numbers; rational numbers; real numbers; operations; relations; properties, algorithms; elementary number theory.

MATH. 581. *Mathematics for Elementary Teachers: Probability and Statistics*
Organization and analysis of data; elementary probability; probability distributions; sampling; decision making; regression and correlation. Many topics are to be presented using ideas that can be adapted for the elementary classroom. *Prerequisite:* Math. 121 and 122 or equivalents.

MATH. 593. *Mathematics for Elementary Teachers: Finite Mathematics*
Partitions; permutations; probability measure; conditional probability; vectors; matrices, operations and properties; linear programming; applications. *Prerequisites:* Math. 121 and 122 or equivalents.

Analysis; Descriptive and Inferential Statistics; Experimental Design; Strategy of Historical, Descriptive and Experimental Studies. *Prerequisites:* Nine semester hours of graduate mathematics beyond baccalaureate degree.

MATH. ED. 600: A, B, C. Developments in Mathematics Education

A: Curriculum; B: Analysis of Teaching for Mathematics Teachers; C: Teaching Methods. Each section of the course is distinct from the others. Each is a seminar on current practices in teaching or learning mathematics. *Prerequisites:* Teaching experience and nine hours of graduate mathematics beyond the Baccalaureate degree.

MATH. 603. Theory of Matrices

The algebra of matrices and determinants; equivalence, similarity and congruence relations on matrices; vector spaces, linear transformations; characteristic roots and vectors; applications. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus.

MATH. 611. Theory of Sets

Sets; relations; functions; order and Zorn's lemma; ordinal numbers and their arithmetic; cardinal numbers and their arithmetic. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus.

MATH. 612. Complex Analysis

Representation theorems, analytic continuation, entire meromorphic functions, conformal mapping, majorization.

MATH. 613. Calculus of Several Variables

Differentiation and Integration in R^p space, sets of content zero, sets having content, Inverse Function Theorem, Implicit Function Theorem, Fubini's Theorem. *Prerequisite:* Math. 417.

MATH. 615. Lebesgue Integration

Introduction to Lebesgue measure and integration in R^p , measurable sets and measurable functions, sets of measure zero, convergence in measure, limit properties of Lebesgue integrable functions, Fubini's theorem, L^p spaces, Riesz-Fischer theorem. *Prerequisites:* Math. 301 and Math. 417.

MATH. 621. Non-Euclidean Geometry

Historical development; hyperbolic plane geometry; elliptic plane geometry; topics from hyperbolic and elliptic trigonometry; consistency of non-Euclidean geometries. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus.

MATH. 631. Foundations of Mathematics

The axiomatic method; theory of sets and infinite sets; real number system and linear continuum; the complex number system; groups and their significance for the foundations; development of various viewpoints on foundations. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus.

MATH. 635. Mathematical Logic

Statement calculus; predicate calculus; formal theories; decidability; completeness; consistency. *Note:* Not open to students with credit for Math. 432 or equivalent. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus to include Math. 301, 302 or 303 or equivalent.

MATH. 651. Theory of Numbers

Counting and recording of numbers; properties of numbers; Euclid's algorithm; prime numbers; the aliquot parts; indeterminate problems and their theory; Diophantine problems; congruences; analysis of congruences; Wilson's theorem; Euler's theorem; theory of decimal expansions; the converse of Fermat's theorem; the classical construction problems. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus.

MATH. 672. Topology

Product spaces; convergence by sets and filters; compact spaces; metrigable spaces; uniform spaces. *Prerequisite:* Math. 417, Math. 471 or equivalent.

MATH. 681. Regression and Correlation

Linear, multiple and nonlinear regression; bivariate normal distribution; simple, partial and multiple correlation, estimation and hypothesis testing of parameters; relationship between regression and correlation. *Prerequisites:* 12 Sem. Hrs. of Math. beyond the Calculus to include Math. 382 or equivalent or permission of the instructor.

MATH. 683. Design and Analysis of Experiments

Principles of experimental design; model types; analysis of completely randomized block, Latin square and factorial designs; multiple comparisons of treatment effects. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus to include Math. 382 or equivalent or permission of the instructor.

MATH. 685. Theory of Statistics I

Probability; discrete and continuous random variables and distributions; expected values and moments; sampling; point estimation. *Prerequisites:* 12 semester hours of math. beyond the calculus.

MATH. 686. Theory of Statistics II

Sampling distributions; interval estimation; tests of hypotheses; multivariate normal distribution; sequential tests; non-parametric methods. *Prerequisite:* Math. 685.

MATH. 690. Project

A research study or an investigation of a mathematical problem or topic under the guidance of a qualified member of the graduate faculty. Written approval by the faculty member and the Chairman of the Department is necessary before registration is permitted.

MATH. 696. History of Mathematics

Chronological study of the development of elementary mathematics; contributions of nations, ages or periods; selected biographies; appraisals and critiques; problem studies. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus.

MATH. 701. Modern Algebra I

Cyclic groups; transformation groups; factor groups; groups with operators; isomorphism theorems; composition series; direct products of groups; Sylow theorems; residue class rings; operations on ideals; extensions of rings. *Prerequisite:* Math. 301 or equivalent.

MATH. 702. Modern Algebra II

Polynomial rings; factorization in polynomial domains; maximal, prime, and primary ideals; Noetherian rings; prime fields; extensions of fields; splitting fields; separability; irreducibility; Galois theory. *Prerequisite:* Math. 701 or equivalent.

MATH. 732. Selected Topics in Mathematical Logic.

Topics will be chosen from model theory, proof theory and non-standard logics with emphasis on recent developments in these areas. *Prerequisite:* 12 Sem. Hours of Math. beyond the Calculus to include Math. 431 or 635 or equivalent.

MATH. 735. Selected Topics in Recursive Function Theory

Study in depth of some particular topics in Recursive Function Theory such as degrees of unsolvability, recursive equivalence types, isols, simple sets, productive sets and creative sets. *Prerequisite:* 12 Sem. Hrs. of Math. beyond the Calculus to include Math. 435 or equivalent or permission of the instructor.

MATH. 795. Thesis

An individual investigation into an area of mathematics under the guidance of a faculty member.

PHILOSOPHY DEPARTMENT

PHIL. 401. Theory of Value (g)

PHIL. 402. Seminar in Philosophy (g)

PHIL. 404. British Empiricism (g)

PHIL. 407. Philosophy of Psychology (g)

PHIL. 408. The Theory of Logic and Mathematics (g)

PHIL. 501. Analytic Philosophy I

Philosophical logic and philosophy of language: developments in these areas from Frege and Wittgenstein to Quine and Austin.

PHIL. 502. Classical and Contemporary Ethical Theories

An in depth analysis of the major traditional in contemporary theories of Ethics, including an examination of such key concepts as commands and imperatives, virtue, goodness and sympathy.

PHIL. 503. Selected Topics in Classical Theory of Knowledge

An inquiry into the nature of epistemology and into leading theories within the classical tradition. Emphasis on one

or more of the following problems: the nature of mental activity; language and knowledge; knowledge and values; theories of truth; knowledge of other minds; rationalism and empiricism.

PHIL. 601. Analytic Philosophy II
Metaphysics, Theory of knowledge, and philosophy of mind: developments in these areas from Russell and Moore to Strawson and Smart.

PHIL. 602. Selected Topics in Current Moral Philosophy
An application of contemporary analytical methods to such problems as the analysis of ethical terms, the relation between ethics and logic and the concept of moral reasons.

PHIL. 603. Selected Topics in Classical Metaphysics
An inquiry into the nature and function of metaphysical thinking within the classical tradition. Emphasis on one or more of the following problems: theories of reality; substance and actuality; univer-

sals; space, time and casuality; determinism and freedom; personal identity and the mind-body problem; the nature and existence of God.

PHIL. 701. Advanced Seminar in Philosophy
A continuation of specialized studies in 501-3 and 601-3. Also, an advanced treatment of philosophical topics not covered in the 3 major lines of history of philosophy, ethical theory and analytic philosophy.

PHIL. 703-704. Graduate Tutorial in Philosophy I and II
A closely supervised course of individual instruction designed to provide the graduate student with the experience that is necessary to successfully complete the requirements for the Master's Degree in Philosophy. By examining specific philosophy texts and problems in detail, with a professor whose special area of competence covers the texts which have been selected for examination, the graduate student will gain valuable experience in perfecting reading and research skills.



PHYSICS DEPARTMENT

MASTER OF ARTS IN PHYSICS

Prerequisites

1. A bachelor's degree, or its equivalent, from an accredited college or university.
2. A minimum of forty-eight semester hours of course work in science and mathematics. Applicants showing deficiency in this requirement may be admitted with probationary status until deficiencies are removed.
3. A minimum undergraduate cumulative average of 2.50 on a 4-point scale.
4. A minimum average of 3.00 on undergraduate physics courses completed. Subject to the approval of the Physics Graduate Faculty and the Director of Graduate Studies, applicants who do not meet this requirement may be permitted to prove their acceptability by successful performance in graduate physics courses at this college.
5. Acceptable scores on both the general aptitude test and the advanced physics test of the Graduate Record Examination.

Requirements

1. Completion of at least 30 semester hours of graduate credit with a cumulative average of 3.00 on a 4-point scale. This credit may include at most nine credits of C work and *no* credits of D work.
2. Option with Thesis.
 - (a) The candidate's required 30 credits must include the following:

	Credit Hours
Phy. 616 Advanced Dynamics	3
Phy. 618 Advanced Electricity & Magnetism I	3
Phy. 606 Advanced Quantum Theory I	3

- (b) The candidate's 30 credits must include an additional nine credits in such formal course work as is approved by the Physics Graduate Faculty.
 - (c) The candidate's 30 credits must include a successfully-completed thesis.
 - (d) The candidate must successfully defend his thesis before a committee of three members of the Physics Graduate Faculty.
3. Option without Thesis: Temporarily discontinued

MASTER OF SCIENCE IN SECONDARY EDUCATION — PHYSICS

	Credit Hours
Prerequisites	48
Major Area of Specialization	24
Also required, one year in each of the other sciences and Differential and Integral Calculus.	

Required Courses	18 semester hours are required in graduate science and mathematics courses selected by advisement.	18
Research:	Required of all students who are candidates for the master's degree. Each candidate, after a conference with his adviser, must select one of the following requirements:	
Sci. 595	Research Methods & Techniques in Science Education	3
Phy. 690	Project	3
Phy. 695	Master's Thesis	6
Professional Education	Secondary Education Elective (Student may elect a course in science in lieu of this requirement.)	3
Unrestricted Electives		6
Total Requirements		30

PHY. 510. Physics Laboratory Instruction
Selected experiences involving both new and classical techniques in laboratory and demonstration instruction in Physics and General Science.

PHY. 603. Advanced Thermodynamics and Statistical Physics
Thermodynamics, its laws, some elementary applications; kinetic theory, some elementary applications; statistical mechanics, classical and quantum statistics, ensembles. *Prerequisite:* Phy. 303 and Math. 202 or Phy. 414, or the equivalent. *Credit:* Three semester hours; three 1-hour lectures.

PHY. 606. Advanced Quantum Theory I
Quantum formalism and its interpretations, origins of the theory, Schroedinger equation, one-dimensional systems, statistical interpretations, WKB approximation; applications to simple systems, separation of variables, central potential, scattering problem, hydrogen problem, Rutherford scattering, the harmonic oscillator. *Prerequisite:* Phy. 406, Phy. 414, Phy. 415 and Phy. 417 or Phy. 616, or the equivalent. *Credit:* Three semester hours; three 1-hour lectures.

PHY. 616. Advanced Dynamics
Review of vectorial particle dynamics; Lagrangian formulation of mechanics; the two-body central force problem; rigid body motion in three dimensions; special relativity in classical mechanics; Hamilton's equations of motion; canonical transformations; Hamilton-Jacobi theory;

theory of small oscillations; Langrangian and Hamiltonian functions for continuous systems and fields. *Prerequisite:* Phy. 414, Phy. 415, Phy. 417 or equivalent. *Credit:* Three semester hours; three 1-hour lectures.

PHY. 618. Advanced Electricity and Magnetism I
Theory, boundary value problems, and dielectrics in electrostatics; magneto-statics; time varying fields and Maxwell's equations; plane electromagnetic waves; wave guides and resonant cavities; radiating systems and diffraction. *Prerequisite:* Phy. 414, Phy. 415, Phy. 416, Phy. 418 and Phy. 419, or the equivalent. *Credit:* Three semester hours, three 1-hour lectures.

PHY. 690. Research Project in Physics
A study undertaken by one or more individuals on a problem of special interest; the problem must be approved by the Graduate Committee of the Department of Physics before the project is begun; a report on the project must be submitted in acceptable form according to directions given by the Graduate Office.

PHY. 695. Research Thesis in Physics
An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office, the problem and procedure must be approved by the Graduate Committee of the Department of Physics before the investigation is begun.

POLITICAL SCIENCE DEPARTMENT

P.S. 401. International Organization (g)
P.S. 402. History of Political Theory I (g)
P.S. 403. History of Political Theory II (g)
P.S. 404. Contemporary Political Thought (g)
P.S.-SOC. 406. Political Behavior and Public Opinion (g)
P.S. 408. Contemporary Issues in American Constitutional Law (g)
P.S. 505. Contemporary Africa
An examination of the dimensions, dilemmas, and directions of the emerging African states; examples of interaction with the Western world; discussion of the social and economic changes underway.

P.S. 506. International Relations in the World Today
Topics such as international organization, international law, regionalism, economic development, role of ideologies, or relationship of domestic and international politics.

P.S. 511. Urban Politics and Administration
A survey of political behavior and governmental administrative practices in urban areas in the U.S. and abroad. Particular attention is given to historical and contemporary problems in the inner-city and to "solutions" proposed by planners, administrators, and client groups.

P.S. 590. Special Project
Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

SOCIAL STUDIES

S.S. 504. Studies in Non-Western Cultures: The Middle East
An area study of characteristic cultural features of the countries; examples of interaction with Western world; cultural and social changes underway; examples of problems typical of the underdeveloped nations in the world today.

SOCIOLOGY DEPARTMENT

SOC. 401. Juvenile Delinquency (g)
SOC. 402. Sociology of the City (g)
SOC. 403. Contemporary Sociological Theory (g)
SOC. 404. Sociology of Religion (g)
SOC. 405. Foundations of Sociological Thought (g)
SOC.-P.S. 406. Political Behavior and Public Opinion (g)
SOC. 407. Sociology of Occupations (g)
SOC. 411. Sociology of Aging (Social Gerontology) (g)
SOC. 413. Sociology of Law (g)
SOC. 414. Sociology of Addiction (g)
SOC. 415. Population Analysis and Problems (g)
SOC. 416. The American Jewish Community (g)

SOC. 417. Sociology of Education (g)
SOC. 419. Sociology of Punishment and Corrections (g)

SOC. 501. Contemporary Social Problems
Problem areas of American society; sources of information; techniques for discovering and analyzing social problems; analysis of several major problems, selected in accordance with student needs and interests.

SOC. 506. Minority Groups in American Culture
Major racial, nationality, and religious minority groups in America treated from the cultural, historical, and familial point of view; current anthropological and psychological data on uniformities, differences, prejudices, and discrimination.

MA

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8A
- 8B
- 8C
- 8D
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 17.
- 18.
- 19.
- 21.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
- 30.
- 31.
- 32.
- 35.
- 36.
- 37.



FACULTY OF PROFESSIONAL STUDIES

The Faculty of Professional Studies includes the Division of Education and the Division of Exceptional Children Education. The Education Division Faculty are members of the following Departments: Behavioral Studies, Curriculum and Instruction, Foundations of Education, Secondary Education-Social Studies and Student Teaching. Details concerning the programs and courses offered are provided under these headings in this catalog.

Education Division

TEACHER CORPS

The Teacher Corps is a federally funded, two-year post-graduate teacher preparation program for liberal arts graduates, leading to the Master of Science degree in Elementary Education and to Permanent Certification in New York State as an elementary teacher, grades N-6. Intern participants are involved through the senior year of a program emphasizing Elementary Education and continued through a fifth year of a competency based practicum.

The program is designed to produce specially prepared, competent teachers of disadvantaged children in poverty schools and has three major aspects: (1.) Academic work at the College, (2.) Internship experience in central city schools in Buffalo, (3.) Community study and service. For the 1972-74 project, two city schools will be operated as Portal Schools.

Parents, Teachers, Administrators, Pupils, University Professors, and University Students form a working team to improve the education of pupils and to improve the training of teachers in the Portal School concept.

Corps members are paid a \$90 per week stipend plus \$15 per dependent during the entire period of the program, which encompasses one summer session and two full academic years.

The Teacher Corps Program originated under the Higher Education Act of 1965 and is presently administered through the Education Professions Development Bureau in Washington, D. C. The program is authorized through fiscal year 1974.

Each two year cycle is funded separately. Such funding is dependent upon approval of a jointly prepared proposal submitted to Teacher Corps, Washington. New cycle programs usually begin with preservice during July and August. Recruitment is conducted during the preceding spring semester.

Buffalo State University College has conducted three cycles of Teacher Corps and has been authorized to conduct a fourth cycle which will begin in July 1972 and will continue through June 1974.

The Teacher Corps Program is a part of the Professional Studies Division and is administered by the Education Department. Further information may be secured by writing to the Director of Education or the Teacher Corps Director.

TEACHER CORPS/PEACE CORPS

The combined Teacher Corps/Peace Corps project presently functioning at State College and in the city and schools of Lackawanna is one of seven such projects being conducted across the nation.

College graduates with an English and/or Elementary Education background will be prepared to teach English as a foreign language. The students will spend 60% of their time the first year serving as interns in the Lackawanna Public Schools and 40% of their time doing community work and taking college classes. Successful completion of the first year will lead to New York State teacher certification. In mid-May the interns will begin six weeks of intensive Farsi language training in preparation for Afghanistan where they will serve for two years as Peace Corps volunteers teaching secondary school children and demonstrating to Afghan teachers and teachers in training new instructional methodologies.

The entire program is built around the concept of competency-based teacher education; university professors, public school team leaders and interns are all involved in writing and using competency-based modules.

In addition to looking at new ways of training teachers, the program is examining similarities between the structures of urban schools and those of emerging nations. Also, working with numerous ethnic groups both here and abroad will hopefully provide valuable data on the development of teachers for metropolitan areas.

ELEMENTARY EDUCATION, ELEMENTARY AND EARLY SECONDARY EDUCATION

Purpose

The purpose of programs in these areas is to assist each candidate, in the process of acquiring permanent certification, become a master teacher with a particular area of competence and with individuality in using it.

Admission to the Program

Each applicant shall have an earned Bachelor's degree from an accredited College or University and provisional certification for either elementary or elementary and early secondary teaching.

Advisement

A form entitled "Suggestions for Your First Registration" is mailed to all Elementary Education students along with their acceptance into the Graduate Program. Initial course selections are to be made by adhering to the instructions included on this form. Students with special problems may secure additional information by contacting the office of the Coordinator of Graduate Advisement, Education Division, Bacon Hall 302.

The Coordinator of Graduate Advisement will serve as interim advisor until such time as an advisor is selected or appointed. An advisor must be chosen no later than the completion of 9-12 credit hours. It is at this time (completion of 12 credit hours) that students shall apply for Admission to Candidacy. A minimum grade point average of 3.0 is required.

Students must choose an area of concentration (cluster) at this time and plan the remainder of their program in consultation with their advisor.

The student and his adviser, after review of the student's prior experiences and education will plan his graduate work within the framework of the program he has selected. It will be their joint responsibility to examine this program periodically, to assess the growth that is resulting from it, and to revise and enrich it wherever this is appropriate.

	Credit Hours
Professional Experiences Leading to M.S. in Education	
A. Required work outside Professional Education	6
Behavioral Sciences	3 hrs.
Arts and Sciences	3 hrs.
B. Required work in Professional Education	9
Research in Education	6
Two courses (6 cr.) in Research in Education. Options include Ed. 595 plus Ed. 601 (Ed. 532 to be taken by Early Secondary Education majors) or Ed. 595 plus Ed. 690, or Ed. 695.	
Ed. 532 Secondary School Education	3 cr.
Ed. 595 Research in Methods and Techniques	3 cr.
Ed. 601 Seminar in Elementary Education	3 cr.
Ed. 690 Project	3 cr.
Ed. 695 Master's Thesis	6 cr.

Education Electives	3
C. Approved cluster	15
D. Total	30

The candidate and his adviser are responsible for planning a series of experiences directed toward the fulfillment of the purpose of the degree: the development of a master teacher with a particular area of competence and with individuality in using it.

The candidate is free to draw upon all of the resources of the College that contribute to his professional purposes. He and his adviser have the responsibility for determining what proportion of work outside professional education is appropriate to the realization of his purposes.

Areas of Concentration (clusters)

Candidates are required to choose an area of concentration early in their programs. (No later than at the conclusion of 12 credit hours.) Available clusters are listed under Departments as follows:

BEHAVIORAL STUDIES DEPARTMENT

Cluster

- Early Childhood Education
- Educational Psychology
- Educational Research and Statistics
- Elementary School Guidance
- Human Development, available in three sub-clusters emphases:
 1. Early Childhood
 2. Child Development
 3. Adolescent Development
- Human Relationships and Group Dynamics

Major Adviser

- Dr. Febel
- Dr. Ferster
- Dr. Kaltsounis
- Dr. Kaltsounis
- Dr. Martorana and Dr. Penn

Dr. Fink

CURRICULUM AND INSTRUCTION DEPARTMENT

Cluster

- Elementary Education
- Curriculum
- Reading
- Urban Education

Major Adviser

- as assigned
- as assigned
- as assigned
- as assigned

FOUNDATIONS OF EDUCATION DEPARTMENT

Cluster

- History of Education
- Philosophy of Education
- Social Foundations
- Comparative Education

Major Adviser

- Dr. Kelly
- Dr. Grande
- Dr. Long
- Dr. Wells

EARLY SECONDARY EDUCATION—SOCIAL STUDIES DEPARTMENT

Cluster

- Early Secondary Social Studies
- Early Secondary English
- Early Secondary Science
- Early Secondary Mathematics

Major Adviser

- Dr. Poetker
- as assigned
- as assigned
- as assigned

Descriptions of these clusters, with the recommended courses in each, are available in the Offices of the respective Departments and in the office of the Coordinator of Graduate Advisement.

Flexibility and individuality are basic to each program. In an area such as urban education the candidate may wish to draw upon sociology, anthropology, and economics as well as child development, philosophy of education, and materials and media. His previous education and his purposes will influence these choices. The aim is that all programs will lead to depth and continuity in the candidate's field of interest and provide him an opportunity to use educative experiences rather than merely to meet course requirements. Although all courses should result in educative experience, they are not the only channel for it.

The listing of clusters is not intended to be restrictive. Candidates may, with adviser approval, choose an area of concentration which is not listed but which meets their needs and for which there is an appropriate grouping of courses and/or experiences. Likewise, major advisors as indicated, are not the only faculty members available as advisors. Candidates may choose from among any of the Graduate Faculty. Assignment/selection of advisers is made from the office of the Coordinator of Graduate Advisement.

M.S. IN SECONDARY EDUCATION — SOCIAL STUDIES

The Education Division offers a graduate program leading to the degree of M.S. in Secondary Education with a major in Social Studies. Program requirements are as follows:

Credit
Hours

The Teaching of Social Studies in Secondary (Junior and Senior High) School

Prerequisites 36

Undergraduate preparation including at least six hours in United States History; six hours in European History; and the Social Science core of at least 24 hours, including a full year's work in four of the following 6 areas: Anthropology, Economics, Geography, History other than United States or European, Political Sciences, Sociology and N.Y. State provisional certification in Social Studies .

Required Courses 18

Research: Required of all students who are candidates for the master's degree. Each candidate, after a conference with his adviser, must select one of the following requirements:

Ed. 595 Research Methods and Techniques 3
S.S. 690 Project 4
S.S. 695 Master's Thesis 6

Professional Education Elective 3

Unrestricted Electives (with advisor approval) 6

Total Requirements 30

PREPARATION FOR PROFESSIONAL ADVANCEMENT IN ADMINISTRATION AND SUPERVISION (60-hour program)

Persons identified as potential elementary school administrators (principals, supervisors, and supporting staff) may apply for entrance into the program. Required for admittance are: provisional certification for elementary teaching; initial interview, successful scores on the Graduate Record Examination and Miller Analogies.

Application for the program may be made as early as completion of the B.S. or B.A. degree requirements, or as late as completion of the M.S. or M.A. degree requirements. Early enrollment is highly desirable as individual advisement from the coordinators is an integral feature of the program.

Particularly important to the new program is the addition of two courses in Fundamentals of Administration, and the internship and internship seminar experiences. Along with careful advisement, these opportunities should produce a higher calibre of professional administrators who possess the expertise necessary in our current period of rapid, stressful, and complex change.

A typical program would include 30 hours of courses toward a M.S. or M.A. degree, followed by 30 hours of specific administration courses and the internship experience.

At the completion of the 60-hour program a Certificate of Advanced Study will be awarded.

	Credit Hours
Required courses	9-12
Ed. 701 Fundamentals of Administration I	6
Ed. 703 Internship (Principal)	3
Ed. 704 Internship Seminar	3
Ed. 705 Internship (Supervision)	3
Specialty Courses	18-21
Ex.Ed. 502 Administration/Supervision of Programs for Exceptional Children	3
Ed. 532 Secondary School Education	3
Ed. 542 Seminar in Secondary School Curriculum	3
Ed. 552 Legal Problems of Education	3
Ed. 607 General School Administration	3
Ed. 631 Supervision of Teaching	3
Ed. 651 Problems in Supervision	3
Ed. 702 Fundamentals of Administration II	6
Ed. 706 Problems in School Administration	3
Ed. 621 Elementary School Curriculum	3

Electives in administrative courses must be under advisement from the coordinators of the program.

An adviser will be appointed upon entry into the program. After completion of 42 credit hours (including the Master's degree) students must apply for admission to candidacy.

COLLEGE STUDENT PERSONNEL SERVICES

The program in College Student Personnel Services is designed primarily for individuals who wish to work with students in a college or university setting. Included in the program will be an overview of the college and university community; the program will also be concerned with the responsibilities of the offices involved with admissions, residence halls, financial aids, registration, international student activities, counseling, college-union activities, placement and the administration of student affairs programs. The program also has relevance for those who wish to work in a variety of community agencies and special programs especially those involving young adults who now have or may have an interest in attending a college or university.

Admission Requirements

1. A baccalaureate or professional degree earned from an accredited college or university.
2. Prerequisite academic work which gives evidence that the applicant should be able to pursue effectively the courses in this program.
The usual prerequisites include 24 semester hours distributed among courses in Sociology or Anthropology, Psychology or Growth and Development, Measurements or Statistics, Philosophy of Education or Problems in Education. There are, of course, substitutions by advisement.
3. A cumulative average of 2.5 or better on a 4 point scale.
4. Three letters of recommendation.
5. The Graduate Record Examination (General Aptitude Test).
6. An interview.

	Credit Hours
Required Courses	27
Ed. 616 Problems and Practices in Higher Education	3
Ed. 617 Seminar on The American College Student	3
Ed. 618 Seminar on Student Personnel Services	3
Ed. 622 Techniques of Counseling	3
Ed. 623 Advanced Techniques of Counseling	3
Ed. 624-625 Internship in Student Personnel Services	6
Ed. 595 Research Methods and Techniques	3
Ed. 590 Research Project	3

Electives 9
 Appropriate courses in Sociology, Education, Anthropology, Psychology and Statistics will be included as electives with the approval of the coordinator of the Student Personnel Program.

Total Requirements 36

Financial Assistance
 There are a limited number of assistantships available. Recipients receive room, stipend and waiver of tuition.

Graduate Course Offerings
 The 400 g level course descriptions may be found in the Undergraduate Catalog. Graduate students may enroll for a maximum of 12 hrs. of 400 g level courses which must be approved by their adviser.

BEHAVIORAL STUDIES DEPARTMENT

- ED. 411. Evaluation in the Elementary School**
ED. 415. Seminar in Early Childhood Education (g)
ED. 425. The Family and the Elementary School (g)
ED. 427. Community Services for Young Children (g)
ED. 428. Sociodrama and Role Playing in Education (g)
ED. 503. Educational Psychology
 Study of various theories of learning; history of educational psychology; measurements of learning; variables and their interpretation; application of learning theory to the teaching situation.
ED. 509. Personality Adjustment in the Elementary School
 Dynamics of human behavior; prevention of maladjustment; corrective programs; formation of habits and attitudes; recent clinical research.
ED. 515. Laboratory Experiences in the Study of Young Children
 Observing children in various learning situations; joint teacher-student planning of learning situation; review of teaching media for young children; emphasis on stimulating intellectual curiosity through discovery; recording, interpreting and reporting childhood behavior.
ED. 519. Applied Mental Hygiene
 Principles of mental hygiene and their application to personality development, emotional and social adjustment, and human relationships; application of men-

- tal hygiene principles to processes of teaching, pupil learning, classroom management, and conduct of the teacher in lay and professional relationships.
ED. 520. Educational Statistics I (Descriptive and Inferential)
 The course aims to help the student develop a statistical frame of reference in the solution of educational and psychological problems. Basic descriptive statistical concepts are developed, and their application to inferential parametric and non-parametric statistics are strongly emphasized. Types of statistical data — nominal, ordinal, interval and ratio — are described and their corresponding statistical tests are discussed and practiced. *Prerequisites:* None. Some exposure to introductory statistics may be helpful.
ED. 521. Educational Statistics II (Analysis of Variance)
 The second of a two-course sequence of advanced level descriptive and inferential statistics. This course deals basically with advanced concepts of correlation and regression and mainly analysis of variance as it applies to educational research studies. Topics include overview of sampling and probability, simple analysis of variance, n-way designs, multiple contrasts, analysis of covariance and statistical tests following the F-test. Topics are discussed and practiced through application on real studies. *Prerequisite:* Ed. 520.

ED. 523. Principles and Practices of Guidance
 The philosophy of guidance, its place in present education; identifying interests, and attitudes, and understanding problems of the age group and individuals; techniques of counseling and methods of investigation; the role of the teacher, specialist and administrator in guidance; school, home, community resources in a guidance program.

ED. 527. Problems in Educational Services for Young Children
 Current social and economic trends affecting the lives of young children; curriculum contributions for developing individual and group living; educational problems confronting teachers in this specialized field.

ED. 528. Human Relations
 Inter-group problems relating to race, religion, or national origin; slow and rapid learners; old and new residents; "fringers" and participants; competitive practices in school; dividing and integrating factors affecting learning.

ED. 529. Adolescent Psychology
 Characteristics and problems of adolescents in our society; relationship of adolescent behavior to earlier development; special provisions of the early secondary school for this age group. *Prerequisite:* Six semester hours in Human Growth and Development or its equivalent.

ED. 530. Self Processes in Human Development and Education
 Consideration of self theories as they relate to child and adolescent development; emphasis on educational implications. Explorations of self technique applicable in child guidance and learning.

ED. 531. Systematic Study of Children and Youth
 Consideration of basic approaches to a systematic study of children and youth in schools. Examination of child study methods, techniques and tools; standard measures of behavior; group and individual case records. Demonstrations and study of child study tools.

ED. 537. Evaluation in the Secondary School
 Relationship of evaluation to instructional objectives; selecting, administering, scoring, recording and interpreting standard-

ized and teacher-made instruments for evaluating mental abilities, educational achievements, personality characteristics, interests and aptitudes; diagnosis, guidance counseling and improving instruction; organizing programs to provide for individual differences; modern practices in recording pupil progress; statistical concepts and methods of collecting, tabulating, and interpreting data.

ED. 540. Studies in Human Growth and Development
 Research in child and adolescent growth; changing concepts in mental, emotional, social, and personality growth; planning, executing and evaluating "action research."

ED. 556. Group Dynamics in Education
 Theory and practice of group procedures in the school; development of understandings, skills and attitudes conducive to successful group leadership and participation; group study and evaluation; the school group in its sociological, psychological and philosophical setting. Laboratory experience.

ED. 570. Behavior and Development of Young Children
 Investigation of human behavior and development during infancy and early childhood periods with emphasis on educational implications and applications to individual children.

ED. 572. Behavior and Development of Elementary School Children
 Consideration of human behavior and development of children during the elementary and middle school years. Emphasis on educational implications and applications to individual children.

ED. 575. Cognitive Processes in Human Development and Education
 Consideration of cognitive theories as they relate to child and adolescent development; emphasis on educational implications. *Prerequisites:* Ed. 210 or Ed. 251-252.

ED. 580. Physical/Motor Processes in Human Development and Education
 Study of physical/motor structures and processes in human development from infancy through adulthood with special emphasis on applications to teaching/learning in cognitive, affective, and per-

ceptual-motor areas. Consideration of basic approaches for guiding optimum physical/motor development in educational settings, and for preventing avoidable disabilities.

ED. 585. Social Processes in Human Development and Education

Consideration of processes whereby human beings from infancy through adulthood internalize cultural values/patterns and adapt social roles/behaviors. Special emphasis on teaching/learning applications, and basic approaches for guiding optimum social/moral development in educational settings; consideration of prevention, diagnosis and treatment of social disabilities.

ED. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

ED. 595. Research Methods and Techniques

The scientific method, including various methods of research; an analysis of different types of research studies; procedures in developing a research paper; elementary statistical terminology; collecting, classifying, and evaluating data. Required of candidates for master of science degree not writing a thesis or completing a research project.

ED. 616. Problems and Practices in Higher Education

A survey course for study of historical perspective and current status of higher education—development of higher education as an historical institution. Study of development of its function and structure with emphasis on curriculum, government, administration and finance. Majors only.

ED. 617. Seminar on the American College Student

Examination of selected topics and issues concerned with adolescents and young adults in college and with the student cultures of which they are a part. Topics such as values, attitudes, identity, alienation, expectations, activism, rights, responsibilities and the impact of the college on students will be considered. Majors only.

ED. 618. Seminar on Student Personnel Services

Overview of student personnel services in institutions of higher education. The philosophy, structure and administration of the personnel program and of specific services offered at colleges and universities. Majors only.

ED. 622. Techniques of Counseling

An introductory course in counseling designed to give access to four areas: process, theory, group awareness and practicum. It will attempt to integrate theory and practice using as a frame of reference contemporary issues. Majors only.

ED. 623. Advanced Techniques of Counseling

Advanced integration of theories and schools of counseling with the practice in the counseling process. Special emphasis on case studies, research and evaluation of counseling. *Prerequisite:* Ed. 622.

ED. 624. Internship in Student Personnel Services I

Actual on-the-job experience is provided in a student personnel function under the supervision of a staff member located in the area. This supervisor works closely with the instructor responsible for the course. Individual conferences between the student and the instructor are required. Permission of instructor required.

ED. 625. Internship in Student Personnel Services II

Actual on-the-job experience is provided in a student personnel function under the supervision of a staff member located in the area. This supervisor works closely with the instructor responsible for the course. Individual conferences between the student and the instructor are required. Permission of instructor required.

ED. 690. Project

A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

ED. 695. Thesis

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

CURRICULUM AND INSTRUCTION DEPARTMENT

ED. 414. The Teaching of Reading (g)

ED. 418. Media in Education (g)

ED. 419. Methods and Materials in the Elementary School (g)

ED. 420. Teaching the Language Arts in the Elementary School (g)

ED. 459. Analysis Systems in Education (g)

ED. 502. Practicum in Programmed Instruction

The use of teaching machines and programmed instruction, programming techniques and means of evaluating programs. Laboratory experiences.

ED. 514. Applying Psychology to the Teaching of Reading

An examination of current psychological theories of learning with a view to applying the most relevant of these principles to the teaching of reading, diagnosing reading difficulty and disability, evaluating current reading teaching practices and innovations using psychological criteria and formulating psychologically effective ways of improving the individualization of reading instruction. *Prerequisite:* Ed. 414 or equivalent.

ED. 517. Reading Diagnosis and Prescription: Theory

Causes of reading failure; characteristics of problem readers; diagnosing problems; methods and materials for remedial instruction; working with parents; role of reading specialist. *Prerequisite:* Ed. 414 or equivalent and permission of the department chairman.

ED. 518. Selected Topics in Media Utilization

Topics of common concern explored in depth; individual investigation of a specific problem; recent developments in the field of instructional media. *Prerequisite:* Ed. 418 or equivalent.

ED. 532. Secondary School Education

Origin and functions of secondary education; curriculum patterns; guidance and exploratory programs; articulation between elementary school and senior high school; extra-curricular activities; evaluation in the secondary school; research methods in solving problems listed above and others suggested by students. Required of early secondary students.

ED. 534. Reading Diagnosis and Prescription—Clinical Practicum

Applying knowledge of the methods, materials and theory of reading diagnosis and prescription for elementary children gained in Ed. 517; this course provides an opportunity for clinical experience in reading diagnosis and prescription involving work with children with reading difficulties in a reading clinic situation. The student will be expected to diagnose a child's reading difficulty and conduct effective remediation of the difficulty. *Prerequisite:* Ed. 517 and permission of the department chairman.

ED. 536. Secondary School Problems and Methods

Objectives of secondary school education; basic principles of learning and motivation; curriculum concepts; organizing learning experiences; providing for individual differences; teacher-pupil planning; selecting and organizing learning materials; audio-visual aids to learning; utilizing school, civic, and community resources; status and practice of the core-curriculum; nature and purposes of resource units; evaluating pupil growth.

ED. 542. Seminar in Secondary School Curriculum

Curricular and extra-curricular programs related to social, economic, and community changes, relationship of principles and procedures of curriculum development to educational objectives; relationship of extra-curricular activities to curriculum areas; adaptation of the curriculum to adolescent abilities, needs, and interests; various patterns of curriculum development; financing, organizing, scheduling, and supervising extra-curricular activities; bases for determining extent and type of student participation in school management.

ED. 544. Middle School Curriculum

Teacher of the early adolescent will acquire knowledge of and practical skill in building middle school curriculum. The course will deal with the background of the middle school, nature of the early adolescent, subject matter in the middle school, and the way in which a middle school curricula can be facilitated.

ED. 545. Teaching Reading in the Secondary School

Need of reading instruction in secondary

school; nature of reading process; types of reading programs; reading instruction; planning an effective Secondary Reading Program.

ED. 552. Legal Problems of Education

Foundations of Public School Law; legal problems arising out of the operation of the public school system; New York State Education Law; selected cases from state and federal courts; common law principles.

ED. 553. Curriculum Planning for the Urban Child

Familiarity with problems unique to the urban child—environmental conditions, educational background, educational opportunities, life style, effects of limited environment, relationship of urban child to classroom and existing curriculum. Resource persons from the urban community, field experiences in an urban community, films, discussion and research projects will provide the vehicle for examination of existing conditions and approaches to developing a more relevant curriculum for the urban child.

ED. 554. Social Studies in the Elementary School

A study of goals in elementary social studies and their relationships to organizational concerns, approaches, methods, techniques, media and evaluation; the review and development of appropriate research for application to elementary social studies teaching.

ED. 558. Seminar in Teaching the Disadvantaged Child

Study, analysis and evaluation of classroom procedures relevant to the disadvantaged child. The purpose of the course will be to afford participants to re-think and reconstruct the educational program in his classroom in relationship to research, methods and materials, and characteristics of the child. Major topics to be considered are: self-concept, learning and the disadvantaged, curriculum materials, role of parents, community agencies, research findings related to the disadvantaged. *Prerequisite* Ed. 553.

ED. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out

by student, with consultation and guidance from instructor.

ED. 600. Teaching Elementary School Reading Through Supplementary Materials

Role of various materials used in the school program; identification of types of materials; identification of needs and interests of children served through such material; evaluation of selected material for various purposes; place of various materials in the improvement of reading skills; planning activities which utilize wide reading; using community resources to supplement the reading program.

ED. 601. Seminar in Elementary Education

The use of scientific educational research methods in studying problems in Elementary Education; the selection and discussion of current educational problems; the selection and development of a significant problem in student's area of interest and submission of a research paper. Required of Elementary Education candidates for the master of science degree. *Prerequisite*: Ed. 595.

ED. 607. General School Administration

Principles of school administration; historical beginnings; national, state, and local responsibilities for education; district; township, and county administrative units; boards of education; school services: health, supervision, research, library, and attendance; teacher selection, salary, tenure, in-service education; school building programs.

ED. 614. The Teaching of Reading

Importance of reading in present day society, research in child development and learning and its implication in the teaching of reading; trends in the teaching of reading; developmental levels of reading; reading in the content areas; methods and materials; evaluation and guidance of pupil growth in reading. *Prerequisite*: Ed. 414.

ED. 621. The Elementary School Curriculum

Review of child nature, learning processes, purposes of the elementary school; conflicting philosophies and principles of curriculum development; types of curriculum organization; transitional steps; methods and materials; creative activities; mental health; community resources; individual differences.

ED. 631. Supervision of Teaching

Principles of supervision; classroom observation; evaluating teaching; effect of teachers' purposes and research on choice of subject matter and teaching procedures; teacher-pupil relationships; group and individual conferences; induction of new teachers; intervisitation; demonstration teaching; teachers' meetings; bulletins; workshops; evaluation of program.

ED. 651. Problems in Elementary School Supervision

Advanced study of special problems of supervision; the roles of the teacher and supervisor in the total school program; human relations; group dynamics; creative teaching; in-service education; teacher selection and evaluation; self-evaluation by teachers; educational leadership; role of special teachers. (Open to 60-hr. candidates only). *Prerequisite*: Ed. 701.

ED. 690. Project

A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

ED. 695. Thesis

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

ED. 701. Fundamentals of Administration

Principles and theories which influence decision-making processes in education; implications of philosophical, psychological, sociological, scientific and technological factors; the study and application of research in group organization, leadership, communication and related concepts of power and authority. *Prerequisite*: Thirty hours of approved graduate studies, to be reviewed by Committee. Open to 60 hr. candidates only.

ED. 702. Fundamentals of Administration II

The school in its societal setting; principles of school organization and resulting patterns at national, state and local levels; the bases of curriculum development and supportive administrative/supervisory functions; analysis of legal structures; problems of community relationships; aspects of staff recruitment,

orientation, evaluation and negotiations. *Prerequisite*: Ed. 701.

ED. 703. Internship in Administration (Principal)

Full time experience in administration (curriculum-principal); planning and directing appropriate educational experiences under guidance and supervision of experienced administrator; seminar to run concurrently. *Prerequisite*: Ed. 701 and approval of instructor.

ED. 704. Internship Seminar

Problems of beginning administrators and supervisors; crucial issues in elementary education; function of theory and philosophy in problem solving and decision making. *Prerequisite*: Ed. 701 and approval of instructor.

ED. 705. Internship in Supervision (Curriculum)

Full time experience in supervision (curriculum); planning and directing appropriate educational experiences under guidance of experienced supervisor; seminar to run concurrently. *Prerequisite*: Ed. 701 and approval of instructor.

ED. 706. Problems in Administration

The utilization of organization development techniques, and other problem-solving and diagnosing skills as a means of reducing and resolving the problems confronted today in elementary school administration. The course focuses on individual and group problem-solving, group decision-making by consensus, communication, diagnosing and analyzing, conflict management, data gathering, and team development. Simulations and role playing are utilized throughout the course. *Prerequisite*: Ed. 701 and Ed. 702.

FOUNDATIONS OF EDUCATION DEPARTMENT

ED. 403. Historical and Philosophical Forces Influencing Secondary Education (g)

ED. 410. Philosophy of Education (g)

ED. 412. Comparative Education (g)

ED. 423. Comparative Educational Systems: Western Europe (g)

ED. 440. History of American Education (g)

ED. 504. The Community Junior College
Purposes, functions, and characteristics of the Community Junior College; historical

and philosophical backgrounds; current issues in higher education; the improvement of instruction; administration and organization; student personnel services; school and community relations; related research.

ED. 541. Social Foundations of Education

Relationships of school to society; contemporary social problems affecting education, social groups and institutions; school and community relations; nations; national, state and community organizations affecting educational programs and the development of social understandings in pupils.

ED. 561. Institute, Target: Human Understanding

The initial experience in the experimental program for the preparation of teachers in two-year colleges; a six-week workshop directed toward increased understanding of self and others; one-to-one relationships with young adults; consultation with experts in such fields as education, medicine, psychology, psychiatry, and sociology; explorations of ways to put these understandings of self and others to work in teaching process. *Prerequisite:* Approval of instructor.

ED. 568 and 569. Professional-Academic Seminar I and II

An inter-institutional, inter-disciplinary seminar for the students and faculty participating in the experimental program for the preparation of teachers for two-year colleges; identification and exploration of problems encountered in making teaching and learning relevant in the lives of teachers and learners. *Prerequisite:* Ed. 561 and approval of instructor.

ED. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

ED. 606. Philosophy of Education

Principles underlying educational practices; changing concepts of education; education in a democratic society; teaching procedures as determined by a democratic concept of education. *Prerequisite:* Ed. 410 or equivalent.

ED. 690. Project

A study undertaken by one or more individuals on a problem of special inter-

est; must be submitted in acceptable form according to directions given by the Graduate Office.

ED. 695. Thesis

An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

SECONDARY EDUCATION — SOCIAL STUDIES DEPARTMENT

S.S. 502. Teaching Social Studies

Nature of the Social Studies, its content, its methodology; survey of proposals and trends in curriculum, evaluation and instructional resources.

ED. 532. Secondary School Education

ED. 536. Secondary School Problems and Methods

ED. 542. Seminar in Secondary School Curriculum

Note: Course Descriptions for the above may be found in the Department of Curriculum and Instruction listing.

ED. 508. Supervision of Student Teaching

Clarifying responsibilities of sponsor teachers; planning effective conferences with students; developing ways of helping students evaluate their own growth; keeping diversified records; clarifying long and short term planning; helping students plan learning experiences.

S.S. 590. Special Project

Research or investigation of a particular problem, to be planned and carried out by student, with consultation and guidance from instructor.

S.S. 613. Seminar in Secondary Social

Studies Teaching and its Curriculum
Designed to provide discussion and research of the problems and innovations of the secondary school social studies. Emphasis will be placed upon philosophy, curriculum and methodology of the social studies program required by our changing society.

S.S. 690. Project

A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.

Exceptional Children Education Division

MENTAL RETARDATION

Credit
Hours
12-18

Required Courses

By advisement from the following:

- *Ex.Ed. 403 Mental and Educational Measurements
- *Ex.Ed. 404 Curriculum Practices for Children with Mental Retardation
- *Ex.Ed. 408 Creative Arts for Mentally Retarded
- *Ex.Ed. 413 Nature and Needs of Exceptional Children
- *Ex.Ed. 418 Practicum in Mental Retardation
- Ex.Ed. 419 Teaching the Severely Retarded (Trainable)
- Ex.Ed. 420 Speech Problems of Children
- Ex.Ed. 500 The Trainable Mentally Retarded: Trends, Problems and Issues
- Ex.Ed. 501 Psychological and Social Aspects of Mental Retardation
- Ex.Ed. 502 Administration and Supervision of Programs for Exceptional Children
- Ex.Ed. 503 Internship Program in Mental Retardation
- Ex.Ed. 504 Seminar in Mental Retardation
- Ex.Ed. 505 Survey of Specific Learning Disabilities
- Ex.Ed. 506 Supervision of Student Teachers in Mental Retardation
- Ex.Ed. 507 Secondary Work-Study Programs for the Mentally Retarded
- Ex.Ed. 508 Understanding the Problem Child in the Classroom
- Ex.Ed. 509 The Gifted Child
- Ex.Ed. 510 Expanding Self Awareness for Effective Teaching
- Ex.Ed. 527 Guidance of Children who are Exceptional
- Ex.Ed. 590 Special Project
- Ex.Ed. 621 Communication Problems of the Mentally Retarded

Required Courses in Arts and Sciences

3-9

Chosen by advisement from Art, English, Geography, Mathematics, Music, Philosophy, Science and Social Sciences.

*These courses meet New York State certification requirements. Students seeking certification should consult with the Division Director before first registration.

Research	3-6
Ed. 595 Research Methods and Techniques	3
Ex.Ed. 690 Project	3
Ex.Ed. 695 Master's Thesis	6
(Each candidate, after conference with his adviser, must select <i>one</i> of the above requirements.)	

Unrestricted Electives	3-12
Total Requirements	30

PHYSICAL HANDICAP

Required Courses	Credit Hours 12-18
-------------------------------	--------------------------

By advisement from the following:

Ex.Ed. 403	Mental and Educational Measurement
*Ex.Ed. 413	Nature and Needs of Exceptional Children
*Ex.Ed. 417	Curriculum Practices for Children with Orthopedic Handicap
Ex.Ed. 420	Speech Problems of Children
*Ex.Ed. 421	Practicum in Teaching Children with Orthopedic Handicap
Ex.Ed. 505	Survey of Specific Learning Disabilities
Ex.Ed. 508	Understanding the Problem Child in the Classroom
Ex.Ed. 509	The Gifted Child
Ex.Ed. 510	Expanding Self Awareness for Effective Teaching
*Ex.Ed. 527	Guidance of Children Who Are Exceptional
Ex.Ed. 590	Special Project

Required Courses in Arts and Sciences	3-9
Chosen by advisement from Art, English, Geography, Mathematics, Music, Philosophy, Science and Social Sciences.	

Research	3-6
Ed. 595 Research Methods and Techniques	3
Ex.Ed. 690 Project	3
Ex.Ed. 695 Master's Thesis	6
(Each candidate, after conference with his adviser, must select <i>one</i> of the above requirements.)	

Unrestricted Electives	0-12
Total Requirements	30

*These courses meet New York State certification requirements. Students seeking certification should consult with the Division Director before first registration.

COMMUNICATION DISORDERS

Required Courses	15-18
-------------------------------	-------

By advisement from the following:

Ex.Ed. 402	Practicum in Community Agencies
Ex.Ed. 405	Practicum in Schools
Ex.Ed. 412	Audiometry and Hearing Aids
Ex.Ed. 414	Audiology I
Ex.Ed. 415	Speech Reading and Auditory Training
Ex.Ed. 416	Stuttering
Ex.Ed. 524	Seminar in Audiology
Ex.Ed. 559	Seminar in Stuttering: Theory and Research
Ex.Ed. 590	Special Project
Ex.Ed. 609	Seminar in Voice and Articulation
Ex.Ed. 612	Neuropathologies of Speech
Ex.Ed. 616	Diagnostic Principles and Procedures
Ex.Ed. 617	Seminar in Cleft Palate
Ex.Ed. 621	Communication Problems of the Retarded

Research	3-6
Ed. 595 Research Methods and Techniques	3
Ex.Ed. 690 Project	3
Ex.Ed. 695 Master's Thesis	6

Electives from other areas by advisement	6-9
Total Requirements	30

NOTE: Students with undergraduate degrees in arts and sciences or education may schedule a full thirty hour program in communication disorders (including the research requirement), providing minimal departmental undergraduate prerequisites have been satisfied.

EX.ED. 402. Clinical Procedures in Organization of School and Clinic Speech and Hearing Programs (g)	EX.ED. 412. Audiometry and Hearing Aids (g)
EX.ED. 403. Mental and Educational Measurement (g)	EX.ED. 413. Nature and Need of Exceptional Children (g)
EX.ED. 404. Curriculum Practices for Children With Mental Retardation (g)	EX.ED. 414. Introduction to Audiology (g)
EX.ED. 408. Creative Arts for Mentally Retarded (g)	EX.ED. 415. Speech Reading and Auditory Training (g)
EX.ED. 409. Curr. Practices for L.B.D. Children	EX.ED. 416. Seminar in Stuttering (g)
	EX.ED. 417. Curriculum Practices for Children With Orthopedic Handicap (g)

- EX.ED. 418. Practicum in Mental Retardation (g)
- EX.ED. 419. Teaching the Severely Retarded (Trainable) (g)
- EX.ED. 420. Speech Problems of Children (g)
- EX.ED. 421. Practicum in Teaching Children with Orthopedic Handicap (g)
- EX.ED. 430. Practicum in Learning and Behavioral Disorders (g)
- EX.ED. 500. The Trainable Mentally Retarded: Trends, Problems and Issues
An exploration of major problems, trends, and issues related to providing effective programs for the trainable mentally retarded. Changing attitudes in educational, vocational, institutional, and community planning for the trainable retarded will be studied. *Prerequisite:* Ex. Ed. 419.
- EX.ED. 501. Psychological and Social Aspects of Mental Retardation
A study of nature, etiology, diagnosis, classification and social implications of the condition of mental retardation to the individual, family and community. *Prerequisite:* Ex. Ed. 413.
- EX.ED. 502. Administration and Supervision of Programs for Exceptional Children
A study of those aspects of educational leadership necessary to formulate, organize, implement and evaluate quality public school programs and services for exceptional children. *Prerequisite:* Ex. Ed. 404 or Certification to teach the mentally retarded.
- EX.ED. 503. Internship Program in Mental Retardation
An opportunity to apply the theories and principles learned in cognitive courses to actual practices in administrative, diagnostic, supervisory, recreational and community service roles in programs for the retarded. *Prerequisite:* Full time graduate student in Mental Retardation.
- EX.ED. 504. Seminar in Mental Retardation
A study of current interests, problems, issues, practices, research, theories, methodologies and program innovation and change related to the condition of mental

retardation. *Prerequisite:* Full-time graduate students majoring in mental retardation. The Seminar is required for all such students.

- EX.ED. 505. Survey of Specific Learning Disabilities
Survey of specific learning disabilities found in elementary school children and problems related thereto; methods of identifying and assessing the problem; theoretical bases of remediation and major educational techniques. *Prerequisite:* Human growth and development, educational psychology, nature and needs of exceptional children, and mental and educational measurement, or equivalents.
- EX.ED. 506. Supervision of Student Teachers in Mental Retardation
Clarifying responsibilities of sponsor teachers; techniques of evaluation and conferring with students; determining content of student teaching experience; ways of helping students become effective teachers of the retarded. *Prerequisite:* A fully certificated teacher of the mentally retarded with a minimum of two years of successful teaching experience.
- EX.ED. 507. Secondary Work-Study Programs for the Mentally Retarded
A study of basic knowledge, skills and attitudes necessary for planning, implementing and coordinating work-study programs for the retarded in the secondary school. *Prerequisite:* Ex. Ed. 404.
- EX.ED. 508. Understanding the Problem Child in the Classroom
Personal and social factors as related to the problem child in an educational setting; case study of an individual pupil; modification of specific problems; group discussion of reports. Enrollment limited to fifteen. Open to graduate students in any division. *Prerequisite:* Ex. Ed. 101 or Ex. Ed. 413 and permission of the instructor.
- EX.ED. 509. The Gifted Child
Study of the nature and needs of children who are gifted; examination of such provisions as acceleration, partial-segregation, enrichment, special classes; criteria for identifying; implications for classroom teacher.

- EX.ED. 510. Expanding Self Awareness for Effective Teaching
Designed to increase understanding and acceptance of personal feelings as they affect teaching behavior. The impact one makes on others; his ability to listen and be attentive; the effects one's behavior has in teaching-learning situations with children having learning and behavioral disorders are covered. *Prerequisite:* Majors in Exceptional Children Education Division working with children having Learning and Behavioral Disorders, Communication Disorders, Physical Handicaps and Mental Retardation.
- EX.ED. 524. Seminar in Audiology
Review of research and current clinical advances in Audiology. Emphasis will be given to recent areas of measurement and the relationship to diagnostic considerations. Observation and participation in advanced testing diagnostic appraisals. *Prerequisite:* Ex. Ed. 412 or equivalent.
- EX.ED. 527. Guidance of Children Who Are Exceptional
Education, social and vocational guidance of children who are exceptional because of intelligence, physical development, behavior, speech and hearing.
- EX.ED. 559. Seminar in Stuttering: Theory and Research
Review of major etiological theories of stuttering and investigations pertaining to these constructs. A review of current research related to the remediation of stuttering behavior will also be undertaken. *Prerequisite:* Ex. Ed. 416.
- EX.ED. 590. Special Project
Research or investigation of a particular problem to be planned and carried out by student, with consultation and guidance from instructor.
- EX.ED. 604. Workshop in Curriculum for Cerebral Palsied Children
Structured to encourage formulation of realistic curriculum for slow-learning cerebral palsied children in the elementary school grade range. Participants will be required to originate curricular proposals, working under guidance provided by workshop specialists. *Prerequisite:* Ex. Ed. 417 or equivalent.

- EX.ED. 609. Advanced Seminar in Voice and Articulation Problems
Etiology and treatment of more severe voice problems, severe articulation problems, and esophageal speech. Investigation of current research. *Prerequisite:* Ex. Ed. 306.
- EX.ED. 612. Neuropathologies of Speech
Study of neuropathologies related to adult aphasia, cerebral palsy and related motor speech disorders; and brain damage in childhood. Emphasis on diagnostics and therapeutic methods. *Prerequisite:* Ex. Ed. 307.
- EX.ED. 616. Diagnostic Principles and Procedures in Speech Pathology
Investigation and assessment of diagnostic speech and language tests with emphasis on the more recently developed. Experience in their application in the clinical evaluation of speech problems.
- EX.ED. 617. Seminar in Cleft Palate
Study of multiple problems and clinical management of cleft palate persons, emphasis on diagnostic and therapeutic methods; consideration of etiologic, embryologic, morphologic, psychologic, and craniofacial growth factors. *Prerequisite:* Ex. Ed. 307.
- EX.ED. 621. Communication Problems of the Mentally Retarded
Designed for speech clinicians and teachers of the mentally retarded. The nature and needs and condition of retardation with special emphasis on learning, speech and language, are considered. Emphasis is given the role communication plays in the personal, social and occupational adjustment of the retarded.
- EX.ED. 690. Project
A study undertaken by one or more individuals on a problem of special interest; must be submitted in acceptable form according to directions given by the Graduate Office.
- EX.ED. 695. Thesis
An individual investigation of an original problem to be submitted in typewritten form according to directions given by the Graduate Office.

SIGNIFICANT DATES IN THE HISTORY OF THE COLLEGE

- 1867 Legislature created the Normal School at Buffalo
- 1871 Henry B. Buckham appointed Principal, school opened with three departments, Normal, Collegiate, Scientific
- 1873 First graduating class—23 graduates
- 1886 James M. Cassety appointed Principal
- 1895 Three-year "Primary and Kindergarten Course" initiated
- 1906 Manual Arts department established
- 1909 Daniel Upton appointed Principal
- 1910 Household Arts Department established
- 1915 Edward H. Butler, Jr. succeeds Edward H. Butler as President of Local Board
- 1919 Harry W. Rockwell appointed Principal
- 1919 Home Economics Program became four-year course leading to Bachelor of Science in Home Economics
- 1920 Manual Arts Department changed to Industrial Arts Department
- 1925 Normal course became four-year program leading to Bachelor of Science in Education
- 1928 Named changed to New York State College for Teachers; Principal changed to President; accredited by American Association of Teachers Colleges
- 1930 Art Education Department established
- 1931 Moved to present campus
- 1939 Accredited by American Association of University Women
- 1944 Exceptional Children Education Division established
- 1945 Master of Science in Education Degree authorized
- 1948 State University of New York established; College accredited by Middle State Association of Colleges and Secondary Schools
- 1951 President Harry W. Rockwell retired; Dean Ralph Horn became Acting President; Harvey M. Rice appointed President
- 1958 President Harvey M. Rice resigned; Dean Ralph Horn became Acting President
- 1958 Approval of Secondary Teacher Education Curricula in Mathematics and Science
- 1959 Kate Butler Righter appointed Chairman of Local Council
- 1959 Dean Ralph Horn, Acting President, retired; Paul G. Bulger appointed President
- 1959 Name changed to State University College of Education at Buffalo
- 1961 Name changed to State University College at Buffalo
- 1962 Approval of Secondary Teacher Education Curriculum in English

- 1962 Approval of Secondary Teacher Education Curriculum in Social Studies
- 1963 Approval of Liberal Arts Degree Program
- 1963 Kate Butler Righter re-appointed Chairman of Local Council
- 1964 Approval of Secondary Teacher Education Curriculum in Foreign Language
- 1964 Approval of Vocational Technical baccalaureate curriculum
- 1966 Approval of Bachelor of Science curriculum with major in Home Economics
- 1967 President Paul G. Bulger resigned; Dr. Houston T. Robison, Vice-President for Academic Affairs became Acting President; E. K. Fretwell Jr. appointed President; Master of Arts Degree authorized with major in English and Mathematics
- 1968 Master of Arts Degree with major in History was authorized; Approval of Bachelor of Science curriculum with major in Industrial Technology; Department of Chemistry accredited by American Chemical Society
- 1969 Master of Arts Degree with major in Chemistry, Biology and Philosophy was authorized.

ACCREDITATION AND MEMBERSHIP

State University College at Buffalo

accreditations

Board of Regents, University of the State of New York
Middle State Association of Colleges and Secondary Schools
National Council for Accreditation of Teacher Education

affiliations

American Association of Colleges for Teacher Education
American Association of College Registrars and Admissions Officers
American Association of State Colleges and Universities
American Association of University Women
American Chemical Society
American Council on Education
American Library Association
Association for General and Liberal Studies
Association for Higher Education
Association of College Unions
Great Lakes Historical Society
National Association of College and University Summer Session
National Association of Elementary School Principals
National Association of Secondary School Principals
National Association of Student Personnel Administrators
New York State Historical Association

STATE UNIVERSITY OF NEW YORK

"The State University of New York — with more than 320,000 students on 70 campuses from Suffolk on Long Island to Fredonia in the west — stands proudly as an institution unparalleled in its development, unique in its diversity and increasingly looked to as a model of what the public university of the future must become."

In this manner, Chancellor Ernest L. Boyer, at his inauguration in April, 1971, described the State University of New York — America's largest university system and, at the age of 23, its youngest.

Since its founding in 1948, the State University has grown from 29 State-supported but uncoordinated campuses into an organized system of higher education comprising 72 institutions which enrolled 226,000 full-time and 122,000 part-time students in academic 1971-72.

Specifically, the University encompasses four university centers (two of which, Buffalo and Stony Brook, include health science centers); two medical centers; 13 colleges of arts and science; a non-residential college; three specialized colleges; six agricultural and technical colleges; five statutory colleges; and 38 locally-sponsored community colleges. Together, they offer students a choice of more than 3,100 academic specializations, representing more than 1,500 different degree programs. Twelve of the campuses offer graduate study at the doctoral level, 22 at the master's level.

Advanced degree study encompasses a wide spectrum, including agriculture, business administration, criminal justice, dentistry, engineering, forestry, medicine, nursing, optometry, pharmacy and veterinary medicine.

Four-year programs emphasize the liberal arts and science and include such specializations as teacher education, business, forestry, physical education, maritime service, ceramics and the fine and performing arts.

The two-year colleges offer associate degree opportunities in arts and science and in technical areas such as agriculture, business, civil technology, data processing, police science, nursery education, nursing, medical laboratory technology and recreation supervision. The two-year colleges provide transfer programs within the University for students wishing to earn a baccalaureate degree.

Responding to the needs of New York State's economically and educationally disadvantaged citizens, the State University has also established six urban centers and six cooperative college centers. The former provide training for skilled and semi-skilled occupations as well as college foundation courses for youths and adults in inner-city areas. The latter combine the resources of public and private colleges within a region in a joint effort to prepare students for full-time college programs.

Diversity at the State University is further emphasized by its innovative approaches to education. Empire State College, the 72nd and newest institution, is a non-residential college whose students earn degrees with-



out being attached to a specific campus or having to enroll in traditional courses. Its coordinating center at Saratoga Springs reaches out to students through regional learning centers which will be opened, eventually, at 20 locations throughout the State. Several senior campuses are experimenting with programs to shorten the traditional four-year period of baccalaureate study.

Ultimately responsible for the decisions which have led to the growth and diversity of the State University is its Board of Trustees. Appointed by the Governor, the Board determines the policies to be followed by all State-supported institutions of higher education, with the exception of the senior college of City University of New York. The Board's policies are administered by the Chancellor, the chief executive officer of the University.

While the 38 community colleges have their own local boards of trustees and the State pays only one-third of their operating costs and one-half of their capital costs, these two-year colleges operate under the University program.

It is a program which the Trustees and the Chancellor base on a fundamental principle and one which draws the vast and complex campus system into a single University: the improvement and extension of educational opportunities to citizens throughout the State.

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

STATE UNIVERSITY OF NEW YORK

Board of Trustees

Mrs. Maurice T. Moore, B.A., LL.D., L.H.D., <i>Chairman</i>	New York City
James J. Warren, L.H.D., <i>Vice President</i>	Albany
Manly Fleischmann, A.B., LL.B.	Buffalo
William D. Hassett, Jr., B.A., L.H.D.	Snyder
John L. S. Holloman, Jr., B.S., M.D.	New York City
Hugh R. Jones, A.B., LL.B.	Utica
Clifton W. Phalen, B.S., LL.D., L.H.D.	New York City
Mrs. Bronson A. Quackenbush, A.B.	Herkimer
John A. Roosevelt, A.B.	New York City
Oren Root, A.B., LL.B., LL.D.	New York City
Mrs. Edward Siegel, R.N.	Plattsburgh
Roger J. Sinnott, B.S.	Utica
Thomas VanArsdale, B.E.E.	New York City
Don J. Wickham, B.S.	Hector
(One vacancy)	

<i>Chancellor of the University</i>	Ernest L. Boyer, A.B., M.A., Ph.D.
<i>Secretary of the University</i>	Martha J. Downey, B.S., M.A.

THE COLLEGE

Local Council

	Term Expires
Mrs. Kate B. Righter, <i>Chairman</i>	1981
Charles G. Blaine	1973
Mrs. John R. Campbell	1980
Peter Corson	1979
David J. Laub	1978
Jesse E. Nash, Jr.	1975
Mrs. Harlan J. Swift	1974
Mrs. Henry Z. Urban	1977
Raymond Ph. Weil	1976

Administration

E. K. FRETWELL JR., Ph.D.	<i>President</i>
DONALD SCHWARTZ, Ph.D.	<i>Vice President for Academic Affairs</i>
SIGMUND A. SMITH, Ed.D.	<i>Vice President for Administration</i>
THOMAS J. QUATROCHE, M.S.	<i>Vice President for Student Affairs</i>

<i>President of the College</i>	E. K. FRETWELL JR., Ph.D.
<i>Executive Asst. to the President</i>	SILAS R. MOLYNEAUX, M.A.
<i>Dir., Public Information</i>	ELSIE U. KAYE, B.Lit.
<i>Dir., Publications</i>	JOYCE E. FINK, Ed.M.
<i>Dir., Alumni Affairs</i>	ROSALIE TURTON, B.S.Ed.
<i>Asst. to the President</i>	GLENN R. NELLIS, M.A.
<i>Spec. Asst. to the Pres.; Dir., Human Opportunities Office</i>	CHARLES E. HALL, M.S.W.

<i>VICE PRESIDENT, ACADEMIC AFFAIRS</i>	DONALD SCHWARTZ, Ph.D.
<i>Assoc. Vice President</i>	ROBERT E. SHOENBERG, Ph.D.
<i>Assoc. Vice President</i>	JAMES H. YOUNG, Ed.D.
<i>Asst. to the Vice President</i>	RICHARD C. DIEDRICH, Ph.D.
<i>Dir., Admissions and Records</i>	RICHARD N. HALL, M.Ed.
<i>Assoc. Dir.</i>	JAMES R. PILKEY, Ed.M.
<i>Asst. Dir. of Admissions—Undergraduate</i>	KEVIN M. DURKIN, M.S.
<i>Asst. Dir. of Admissions—Graduate</i>	ROBERT J. STEPHEN, M.Ed.
<i>Registrar</i>	NEALE W. PECK, B.A.
<i>Asst. Registrar & Coord. of Registration</i>	THEODORE V. FORD, B.A.
<i>Coord. of Transfer Admissions</i>	PAUL T. COLLYER, M.Ed.
<i>Coord. of Freshman Admissions</i>	JEANNE A. TURANSKY, M.A.
<i>Coord. of Special Program Admissions</i>	LAWRENCE E. BYNUM, B.A.
<i>Coord. of Transcript Evaluations</i>	DOROTHY E. EELLS, M.A.
<i>Admissions Counselor</i>	CHARLES E. DiMIDIO, M.S.
<i>College Librarian</i>	L. E. PALMIERI, Ph.D.
<i>Dir., Continuing Education and Summer Session</i>	STEVEN GITTLER, Ed.D.
<i>Dir., Equal Opportunity Program (SEEK) (Acting)</i>	RAMOND P. EBERLE, M.S.Ed.
<i>Chief Counselor</i>	CARRIE L. JOHNSON, M.A.
<i>Coord., Developmental Research</i>	DUNSTAN L. HAETTENSCHWILLER, M.S.
<i>Dir., Admissions</i>	MICHAEL PIROWSKIN, M.S.
<i>Dir., Accelerated Programs</i>	RICHARD A. MEISLER, Ph.D.
<i>Dir., New Student Programs</i>	Appt. Pending
<i>Dir., Graduate Studies</i>	Appt. Pending
<i>Dir., Instructional Resources</i>	H. GENE STEFFEN, Ed.D.
<i>Dir., International Education</i>	REGINALD K. SMART, Th.D.

<i>Dean, Faculty of Applied Science & Technology</i>	SHERMAN F. DREYER, Ed.D.
<i>Dir., Caudell Division</i>	THERESA R. HUMPHREYVILLE, Ed.D.
<i>Chm., Home Economics Education Dept.</i>	H. VIRGINIA BUTLER, A.M.
<i>Chm., Environmental & Consumer Studies Dept.</i>	ALLAN L. KORN, M.S.
<i>Chm., Nutrition & Food Science Dept.</i>	WALLACE T. WILLIAMS, Ph.D.
<i>Chm., Hum. Dev., Family & Com. Relations Dept.</i>	ADRIAN SOLOMON, Ph.D.
<i>Dir., Industrial Arts Education Division</i>	KENNETH L. SCHANK, Ed.D.
<i>Chm., Communications & Power Dept.</i>	ELLSWORTH M. RUSSELL, Ed.D.
<i>Chm., Manufacturing & Construction Dept.</i>	JACK C. BRUECKMAN, JR., Ed.D.

Chm., Professional & Related Services Dept. EMIL H. HOCH, Ed.D.
 Dir., Technology Division MYRON E. LEWIS, JR., Ed.D.
 Chm., Industrial Technology Dept. MYRON E. LEWIS, JR., Ed.D.
 Chm., Safety Studies Dept. HOWARD J. MEYER, M.Ed.
 Dir., Vocational Technical Division WILLIAM S. REYNOLDS, Ed.D.

Dean, Faculty of The Arts WARREN A. WOLF, M.F.A.
 Chm., Art Education Dept. NORMAN F. TRUESDALE, Ed.D.
 Chm., Design Dept. CLEMENT T. TETKOWSKI, Ed.D.
 Chm., Fine Arts Dept. ROBERT W. BROCK, M.F.A.
 Chm., Music Dept. PETER B. YATES, B.A.
 Chm., Speech & Theatre Arts Dept. JULIA C. PIQUETTE, Ph.D.

Dean, Faculty of Humanities and Social Science
 Assoc. Dean (Acting) STEVEN T. DHONDT, M.A.
 Coord., Afro-American Studies JIDLAPH G. KAMOCHÉ, M.A.
 Chm., Anthropology Dept. JUNE M. COLLINS, Ph.D.
 Coord., Criminal Justice Program EDWARD L. MORGAN, M.S.
 Chm., Economics Dept. WILLIAM B. BENNETT, Ph.D.
 Chm., English Dept. HENRY J. SUSTAKOSKI, M.A.
 Chm., Foreign Language Dept. ERNEST S. FALBO, Ph.D.
 Chm., Geography Dept. JOSEPH A. FEKETE, Ph.D.
 Chm., Health, Physical Ed. & Recreation Dept. CHESTER L. PALMER, Ed.D.
 Chm., History Dept. JAMES R. McDONNELL, Ph.D.
 Chm., Mathematics Dept. RICHARD A. WIESEN, Ed.D.
 Chm., Philosophy Dept. Appt. Pending
 Chm., Political Science Dept. KEITH M. HENDERSON, D.P.A.
 Chm., Sociology Dept. HERBERT A. AURBACH, Ph.D.

Dean, Faculty of Natural Sciences JOSEPH K. HICHAR, Ph.D.
 Chm., Biology Dept. ALDEN E. SMITH, Ed.D.
 Chm., Chemistry Dept. THOMAS A. DONOVAN, Ph.D.
 Chm., General Science Dept. DARRELL D. YOUNG, Ed.D.
 Chm., Geosciences Dept. CARL K. SEYFERT, Ph.D.
 Chm., Physics Dept. FRANK K. HARMAN, Ph.D.
 Chm., Psychology Dept. JERRY F. CATALDO, Ph.D.
 Dir., Great Lakes Laboratory ROBERT A. SWEENEY, Ph.D.

Dean, Faculty of Professional Studies ROBERT B. SIMPSON, Ed.D.
 Assoc. Dean RALPH D. SOLLARS, Ph.D.
 Dir., Education Division JOHN D. MULHERN, Ph.D.
 Assoc. Director—Elementary RUSSELL MACALUSO, M.S.
 Chm., Behavioral Studies Dept. HERBERT V. FERSTER, Ph.D.
 Chm., Curriculum and Instruction Dept. BARBARA R. FREY, Ed.D.
 Chm., Elementary Student Teaching Dept. HENRY S. DOWSKI, Ed.D.
 Chm., Foundations of Education Dept. ALBERT GRANDE, Ph.D.
 Chm., Secondary Social Studies Education Dept. JOEL S. POETKER, Ph.D.
 Dir., Teachers Corps JOHN A. MASLA, Ed.D.
 Dir., Exceptional Children Education Division HORACE MANN, Ph.D.
 Chm., Communication Disorders Dept. ROLLAND J. Van HATTUM, Ph.D.
 Chm., Learning & Behavioral Disorders Dept. RICHARD C. TOWNE, Ph.D.
 Chm., Mental Retardation Dept. Appt. Pending
 Chm., Physical Handicap Dept. MURRAY BLOUSTEIN, Ed.D.
 Dir., Research & Development Complex ELIZABETH L. AYRE, M.A.
 All-Campus Coordinator, Student Teaching RUSSELL D. UTZ, JR., Ed.S.
 Supervising Principal, Campus School (Acting) MANON B. SMITH, M.Ed.

VICE PRESIDENT, ADMINISTRATION SIGMUND A. SMITH, Ed.D.
 Assoc. Vice President THOMAS P. DAVERN, B.S.
 Budget Control Officer BARRY L. SOLOMON, B.A.
 Controller JAMES M. CAPUTI, B.B.A.
 College Accountant DAVID A. BURDETTE, B.A.
 Dir., Computer Operations RAYMOND A. CHAMBERLAIN
 Data Processing Manager ALBERT B. SANTINI, B.S.
 Dir., Institutional Research HILLARD HOFFMAN, Ed.D.
 Dir., Personnel RAYMOND S. BURRY, B.S.
 Dir., Physical Plant JOSEPH D. GOUPIL
 Dir., Security LA VERNE B. ANDERSON, B.S.
 Facilities Program Coordinator CHARLES WINCHESTER
 Faculty-Student Association
 Executive Director HOWARD B. MacADAM, M.A.
 Controller ROBERT E. JOHNSON
 Director, Food Service GERALD C. FINALDI, B.S.
 Manager, College Store CHARLOT M. FETTERMAN, B.S.

VICE PRESIDENT, STUDENT AFFAIRS THOMAS J. QUATROCHE, M.S.
 Dean of Student Life ANGELA PALMIERI, M.A.
 Dean of Student Development LEBANON ARRINGTON, M.S.W.

Dir., Intercollegiate Athletics HOWARD B. MacADAM, M.A.

Dir., Counseling Appt. Pending
 Asst. Dir.-Clinical Prac. & Supervision STANLEY E. SHEETS, Ph.D.
 Asst. Dir.-Admin. & Special Programs A. THEODORE CHAMP, M.S.
 Counselors RUTH CAMPBELL, M.Ed.

Dir., Financial Aids WILLIAM A. TROY, Ed.M.
 Assoc. Dir. DANIEL HUNTER, Ed.M.
 Asst. Dir. SUZANNE H. SOKOLOWSKI, Ed.M.
 Counselors ZOFIA MILLER, Ed.M.; LEROY MITCHELL, B.S.;
 ROBERT A. RADKE, B.S.; NANCY A. GREGORY, M.Ed.

Dir., Housing GEORGE M. BINNER, Ed.M.
 Assoc. Directors THOMAS J. PEPPER, Ed.M.;
 MARILYN STETAR, M.Ed.
 Area Coordinator ANTHONY PAOLUCCI, B.S.

Dir., Placement JUNE H. TRUESDALE, B.S.Ed.
 Asst. Dir. & Counselor JOAN MORGAN, M.Ed.

Dir., Student Activities JOHN E. KENNELL, SR., M.S.
 Assoc. Dir. LEON SMITH, B.A.
 Asst. Directors ROBERT BRADO, Ph.D.; THOMAS BORSCHER, M.S.;
 THOMAS M. CARDMAN, M.P.A.

Dir., Student Health Center S. J. YEOSTROS, M.D.
 Asst. Dir. MADELINE K. TURNER, M.A.
 College Physician WINIFRED G. MERNAN, M.D.
 Physician (Part-time) THOMAS W. BRADLEY, M.D.
 Physician — Psychiatrist (Part-time) ALBERT CUTTER, M.D.
 Nurses LORETTA A. FAHEY, M.S.; MARY SULLIVAN, M.A.;
 MARY ENGEL, R.N.; CATHERINE FOLEY, R.N.; JOAN JONES, R.N.;
 BARBARA McHALE, R.N.; GRACE PO-CHEDLEY, R.N.; JOSEPHINE
 TERRANOVA, R.N.; LENA CALABRESE, R.N.; BARBARA CHAP-
 MAN, R.N.; ELEANOR OLIVA, R.N.

GRADUATE FACULTY*

GERALD F. ACCURSO (1965)
Assistant Professor of General Science
B.S., State University College at
Fredonia; M.S., Canisius College;
Ed.D., State University of New York
at Buffalo.

JOHN R. AIKEN (1964)
Professor of History
B.A., Iowa Wesleyan College; M.A.,
University of Iowa; Ph.D., University
of Rochester.

BERNARD D. ANSEL (1964)
Assistant Professor of History
B.S.Ed., Boston University School of
Education; M.A., Teachers College,
Columbia University; Ph.D.,
University of Kansas.

VINCENT C. ARNONE (1963)
Associate Professor of Art Education
B.S.Ed., State University College at
Buffalo; M.A., Teachers College,
Columbia University; Ed.D., State
University of New York at Buffalo.

MARY W. ATTEA (1970)
Associate Professor of Education
A.B., Nazareth College; Ed.M., Ed.D.,
State University of New York at
Buffalo.

HERBERT A. AURBACH (1970)
*Professor of Sociology and Chairman
of the Department*
B.S., Western Reserve University;
Ph.D., University of Kentucky.

CHARLES R. BACHMAN (1965)
Associate Professor of English
B.A., Baylor University; Ph.D.,
Indiana University.

ROBERT C. BAEUMLER (1964)
Assistant Professor of Fine Arts
B.F.A., State University of New York
at Buffalo; M.F.A., Yale University.

WILLIAM T. BAILEY (1964)
Assistant Professor of Mathematics
B.A., M.A., University of Buffalo;
Ed.D., State University of New York
at Buffalo.

CHARLES E. BALL (1956)
Professor of Industrial Arts
B.S.Ed., State University College at
Buffalo; M.A., Ed.D., New York
University.

VICTOR H. BALOWITZ (1964)
Associate Professor of Philosophy
A.B., Brooklyn College; Ph.D.,
Columbia University.

AREED F. BARABASZ (1969)
*Assistant Professor of Education and
Director, Child Study Center*
B.S., M.S., State University College at
Buffalo; Ed.D., State University of
New York at Albany.

JOSEPH BARBACK (1969)
Associate Professor of Mathematics
A.B., University of Buffalo;
M.S., Ph.D., Rutgers University.

WILLIAM J. BARNETT (1950)
Professor of Education
B.Ed., State Teachers College at
Brockport; M.Ed., University of
Rochester; Ed.D., University of
Buffalo.

SAUL BARRON (1964)
Professor of Chemistry
B.S., Lafayette College; M.S., Ph.D.,
Ohio State University.

JAMES A. BATTISTONI (1965)
Associate Professor of Art Education
B.S.Ed., M.S.Ed., State University of
New York College for Teachers at
Buffalo.

CARLTON E. BAUER (1956)
Professor of Design
B.S.Ed., M.A., Ph.D., New York
University.

KATHRYN J. BEAM (1967)
Assistant Professor of General Science
B.A., Ed.M., State University of
New York at Buffalo.

PAUL R. BEAUDET (1961)
Associate Professor of Geography
B.S.Ed., State Teachers College at
Fitchburg; M.A., Ph.D., Clark
University.

ALFRED W. BECKER (1963)
Professor of Foreign Language
B.A., M.A., Ph.D., University of
Maryland.

NANCY B. BELFER (1960)
Associate Professor of Design
B.S.Ed., State University College at
Buffalo; M.F.A., School for American
Craftsmen.

WILLIAM B. BENNETT (1969)
*Associate Professor of Economics and
Chairman of the Department*
A.B., Princeton; M.A., Ph.D.,
University of Rochester.

ANDREW F. BERETVAS (1968)
Assistant Professor of Physics
B.S., M.S., Ph.D., University of
Chicago.

JOHN A. BICE (1963)
Associate Professor of Fine Arts
B.F.A., M.A., M.F.A., University of
Colorado.

EDWARD C. BIEWALD (1969)
Associate Professor of Industrial Arts
B.S., Central Connecticut State College;
M.A., New York University; Ph.D.,
University of Connecticut.

JOHN J. BISHOP (1968)
Professor of Fine Arts
A.B., M.A., Ph.D., Boston University.

MURRAY BLOUSTEIN (1955)
*Professor of Physical Handicap and
Chairman of the Department*
B.S.S., City College of New York;
M.A., Ed.D., Teachers College,
Columbia University.

JOSEPH A. BOLINSKY (1954)
Professor of Fine Arts
B.S.Ed., New Jersey State Teachers
College; M.A., Teachers College,
Columbia University; M.F.A., State
University of Iowa.

HAROLD C. BOX (1967)
Adjunct Associate Professor of Physics
B.S., Canisius College; M.A., Ph.D.,
State University of New York at
Buffalo.

ARTHUR L. BRADFORD (1946)
Professor of English
A.B., M.S., University of Missouri;
Ph.D., George Peabody College.

WESLEY F. BRETT (1959)
Professor of Design
B.Ed., Keene Teachers College; M.Ed.,
University of New Hampshire.

MONICA C. BRINSON (1959)
*Associate Professor of Environmental
and Consumer Studies*
B.S., State University College at
Plattsburgh; M.S., Purdue University.

ROBERT W. BROCK (1962)
*Associate Professor of Fine Arts and
Chairman of the Department*
Diploma, Dayton Art Institute; B.F.A.,
University of Dayton; M.F.A., Ohio
University.

STANLEY E. BROOKS (1961)
Professor of Industrial Arts
B.A., M.A., George Peabody College;
Ed. D., University of North Dakota.

EDMUND A. BROWN (1948)
Professor of History
B.A., Amherst College; M.A., Yale
University; Ph.D., Columbia
University.

KENNETH W. BROWN (1953)
Professor of Industrial Arts
B.S., M.S., Kansas State Teachers
College; Ph.D., Ohio State University.

RICHARD C. BROWN (1952)
Professor of History
B.S., Ohio State University; M.A.,
Colgate University; Ph.D., University
of Wisconsin.

JACK C. BRUECKMAN, JR. (1964)
*Professor of Industrial Arts and
Chairman of the Manufacturing and
Construction Department*
B.S.Ed., M.S.Ed., State University
College at Buffalo; Ed.D., State
University of New York at Buffalo.

ERIC BRUNGER (1954)
Professor of History
B.S.Ed., State University College at
Oswego; M.S.Ed., Ph.D., Syracuse
University.

JOHN J. BRUNO (1966)
Professor of Education
B.S.Ed., M.S.Ed., State University
College at Buffalo; Ed.D., State
University of New York at Buffalo.

*As of June, 1972.

RUTH M. BUDDENHAGEN (1945)
Professor of Nutrition and Food Science
B.S.Ed., State University College at Buffalo; M.A., Teachers College, Columbia University.

JOSEPH H. BUNZEL (1967)
Professor of Sociology
JUD, University of Vienna.

ROBERT C. BURKHART (1965)
Professor of Art Education
B.A., Colby College; M.A., University of Pittsburgh; Ed.D., Pennsylvania State University.

WILLIAM E. BURNS (1966)
Professor of Industrial Arts
B.S., State Teachers College, Oswego; M.S., State University of New York College of Education at Oswego; Ed.D., University of Maryland.

MARGARET F. BURRILL (1969)
Assistant Professor of Psychology
M.S., Ph.D., Rutgers University.

ROBERT E. BUXTON (1967)
Professor of Industrial Arts
B.S., M.S., Oregon State College; Ed.D., University of Maryland.

LOUIS J. CALLAN (1946)
Professor of Industrial Arts
B.S.Ed., State University College at Buffalo; M.A., Ph.D., Ohio State University.

DAVID A. CAPIELLO (1948)
Professor of Industrial Arts
B.S.Ed., State Teachers College at Buffalo; M.S., Cornell University; Ed.D., State University of New York at Buffalo.

JOSEPH A. CAPUTO (1968)
Associate Professor of Chemistry
B.S., M.S., Seton Hall University; Ph.D., University of Houston.

JOHN C. CARBONARA (1964)
Assistant Professor of Philosophy
B.A., M.A., Ph.D., State University of New York at Buffalo.

JOAQUIN J. CARDOSO (1968)
Associate Professor of History
B.S., Pennsylvania State College; M.A., Lehigh University; Ph.D., University of Wisconsin.

FREDA A. CHALMER (1966)
Associate Professor of Education
B.S.Ed., State University College at Buffalo; Ed.M., Ed.D., State University of New York at Buffalo.

RUDOLPH J. CHERKAUER (1948)
Professor of Mathematics
B.S.Ed., New York State College for Teachers at Buffalo; Ed.M., Ed.D., University of Buffalo.

FRANK CHERRY (1969)
Professor of Sociology
B.S., Alabama State College; M.A., Fisk University; Ph.D., University of Chicago.

F. JUNE CLARKE (1959)
Professor of Home Economics Education
B.S.Ed., Buffalo State Teachers College; M.S., Ed.D., Cornell University.

LEO A. COHEN (1969)
Professor of Education
B.S., University of Massachusetts; M.A., University of Connecticut; Ed.D., Boston University.

SIDNEY COHEN (1966)
Professor of Chemistry
B.S., Northeastern University; M. S., Tufts University; Ph.D., University of Colorado.

FRANK E. COLE (1968)
Adjunct Assistant Professor of Physics
B.S., LeMoyne College; Ph.D., Washington State University.

JUNE M. COLLINS (1968)
Professor of Anthropology and Chairman of the Department
B.S., University of Washington; M.A., Ph.D., University of Chicago.

ORVIS F. COLLINS (1968)
Professor of Sociology
M.A., Ph.D., University of Chicago.

CLARENCE A. COOK (1947)
Professor of Industrial Arts
B.S.Ed., State University College at Buffalo; M.S., Cornell University; Ed.D., State University of New York at Buffalo.

ELOISE N. COURTER (1966)
Professor of English
B.A., Douglass, Rutgers University; M.A., Teachers College, Columbia University; Ph.D., University of Minnesota.

STANLEY A. CZURLES (1931)
Professor of Art Education
B.F.A., M.F.A., Syracuse University; Ph.D., University of Iowa.

EUGENE L-G DAKIN (1947)
Professor of Design
B.S., University of Wisconsin; M.S., Teachers College, Columbia University; Professional Diploma, Columbia University.

ROBERT E. DAVIDSON (1959)
Associate Professor of Fine Arts
B.F.A., Cranbrook Academy of Art; M.F.A., University of Guanajuato.

ROBERT J. DAVITT (1965)
Assistant Professor of General Science
B.S., Niagara University; M.S.Ed., Canisius College; Ed.D., State University of New York at Buffalo.

MANUEL P. DE ALMEIDA (1964)
Associate Professor of Foreign Language
M.A., Ph.D., Laval University.

RAM DESAI (1963)
Professor of Political Science
B.A., University of Bombay; M.A., Wayne State University; Ph.D., Michigan State University.

STANLEY DICKSON (1956)
Professor of Communication Disorders
B.A., M.A., Brooklyn College; Ed.D., State University of New York at Buffalo.

RICHARD C. DIEDRICH (1964)
Associate Professor of Mathematics and Assistant to the Vice President
B.S.Ed., State University of New York College for Teachers at Buffalo; M.S., Ph.D., Syracuse University.

MARY K. DIENST (1965)
Associate Professor of Nutrition and Food Science
B.S., Iowa State University; M.S., Cornell University.

WILLIAM A. DONNELLY (1964)
Professor of English
B.A., University of Notre Dame; M.A., Ed.D., Teachers College, Columbia University.

THOMAS A. DONOVAN (1968)
Associate Professor of Chemistry and Chairman of the Department
B.A., Knox College; Ph.D., University of Illinois.

EDITH F. DOUGLAS (1951)
Associate Professor of Environmental and Consumer Studies
B.S., M.Ed., University of New Hampshire.

KENNETH J. DOWNEY (1968)
Associate Professor of Sociology
B.S.Ed., State University College at Buffalo; M.A., Ph.D., University of Illinois.

NUALA M. DRESCHER (1965)
Associate Professor of History
B.A., St. Joseph's College for Women; M.A., Ph.D., University of Delaware.

FRASER B. DREW (1945)
Professor of English
A.B., University of Vermont; A.M., Duke University; Ph.D., State University of New York at Buffalo.

SHERMAN F. DREYER (1964)
Professor of Industrial Arts and Dean, Faculty of Applied Science and Technology
B.S., M.S., Stout State College; Ed.D., University of Oklahoma.

WALTER M. DRZEWIENIECKI (1963)
Professor of History
Diploma, Polish Military Academy, Ostrow Mazowiecki, Poland; Army General Staff College, Haifa, Palestine; B.S., Wisconsin State College; M.A., Ph.D., University of Chicago.

THEODORE E. ECKERT (1953)
Professor of Biology
B.A., State University of New York at Albany; M.S., Ph.D., Cornell University.

FRANK C. ECKMAIR (1963)
Professor of Fine Arts
B.A., State University of Iowa; M.F.A., Ohio University.

- DORIS K. EDDINS (1947)
Professor of Education
B.S., Bowling Green State University;
A.M., University of Chicago; Ed.D.,
Michigan State University.
- RUPERT J. EDERER (1967)
Professor of Economics
A.B., St. Bonaventure University;
M.A., Ph.D., St. Louis University.
- MOHAMED EL-BEHAIRY (1963)
Professor of Political Science
B. Com., Cairo University; M.A.,
University of Minnesota; Ph.D.,
Ohio State University.
- ELEANOR B. EVENSON (1962)
*Associate Professor of Environmental
and Consumer Studies*
B.S., M.A., University of Minnesota.
- ERNEST S. FALBO (1968)
*Professor of Foreign Language
and Chairman of the Department*
A.B., Reed College; Ph.D., University
of Florence, Italy.
- GERHARD FALK (1957)
Professor of Sociology
B.A., M.A., Western Reserve
University; Ed.D., State University of
New York at Buffalo.
- VELMA J. FEBEL (1956)
Professor of Education
B.Ed., Ed.M., University of Buffalo;
Ed.D., State University of New York
at Buffalo.
- JOSEPH A. FEKETE (1960)
*Professor of Geography and Chairman
of the Department*
B.A., Baldwin-Wallace College; M.A.,
Miami University; Ph.D., University
of Illinois.
- HERBERT V. FERSTER (1966)
*Professor of Education and Chairman
of Behavioral Studies Department*
A.B., Susquehanna University;
M.Ed., Shippensburg State College;
Ph.D., State University of New York
at Buffalo.
- ABEL K. FINK (1956)
Professor of Education
B.A., Brooklyn College; M.A., Ed.D.,
Teachers College, Columbia
University.

- MARY E. FIORE (1963)
Professor of Music
A.B., University of California; M.A.,
San Jose State College; Ph.D., Indiana
University.
- MILDRED J. FISCHLE (1965)
Professor of Education
B.S.Ed., M.S.Ed., State University
College at Buffalo; Ed.D., Ball State
University.
- IRVING S. FOLADARE (1958)
Professor of Sociology
A.B., University of Georgia; Ph.D.,
Columbia University.
- JOHN FONTANA (1929)
*Professor of Vocational Technical
Education*
B.S.Ed., State University College at
Buffalo; M.A., New York University;
Ed.D., University of Buffalo.
- BERNHARD FRANK (1965)
Associate Professor of English
B.S., City College of New York; M.A.,
New York University; Ph.D.,
University of Pittsburgh.
- E. K. FRETWELL JR. (1967)
President
A.B., Wesleyan University; M.A.T.,
Harvard University; Ph.D., Columbia
University.
- BARBARA R. FREY (1963)
*Professor of Education and Chairman
of Curriculum and Instruction
Department*
B.Ed., State University College at
Geneseo; M.Ed., Boston University;
D.Ed., Indiana University.
- MARTIN B. FRIED (1948)
Professor of English
B.S.Ed., State University College at
Buffalo; M.A., Harvard University;
Ph.D., University of Chicago.
- BETTY GALLAGHER (1946)
Professor of Communication Disorders
B.S.Ed., State University College at
Buffalo; M.A., University of Michigan;
Ph.D., University of Wisconsin.
- GEORGE T. GEORGANTAS (1969)
Assistant Professor of Mathematics
A.B., University of Rochester; A.M.,
Washington University; Ph.D., State
University of New York at Buffalo.

- ROSSMAN T. GIESE (1967)
Adjunct Professor of Physics
B.A., M.A., Ph.D., Columbia
University.
- STEVEN GITTLER (1955)
*Professor of Education and Director
of Continuing Education and
Summer Session*
B.A., Lake Forest College; M.A.,
Washington State University; Ed.D.,
University of Buffalo; LL.B., LaSalle
Extension University.
- ROBERT J. GLENN (1968)
Associate Professor of Education
A.B., M.A., San Diego State College;
Ph.D., United States International
University—California, Western
Campus.
- MINERVA J. GOLDBERG (1958)
*Professor of Instructional Resources
and Associate Director, Instructional
Resources*
B.S.Ed., M.S.Ed., State University of
New York College for Teachers at
Buffalo; Ed.D., State University of
New York at Buffalo.
- ARLINE H. GOLDEN (1970)
Assistant Professor of English
B.A., University of Wisconsin; M.A.,
Ph.D., Indiana University.
- WILSON B. GRAGG (1949)
Professor of English
A.B., University of Illinois; A.M.,
Ph.D., Northwestern University.
- FRANCIS L. GRANDISON (1970)
*Professor of Human Development,
Family and Community Relations*
B.A., Prairie View A & M College;
M.A., Ohio State University; Ph.D.,
New York University.
- FRED H. GREENBERG (1964)
Associate Professor of Chemistry
A.B., Berea College; M.S., Ph.D.,
University of Chicago.
- WALTER B. GREENWOOD (1950)
Professor of English
A.B., Transylvania College; M.A.,
Columbia University; Ph.D.,
University of Cincinnati.
- RICHARD GUBERNICK (1969)
Assistant Professor of Fine Arts
B.S., State University College at
Buffalo; M.F.A., University of
Massachusetts.

- JAMES GUYKER (1970)
Assistant Professor of Mathematics
B.S., Grove City College; M.S.,
Ph.D., Lehigh University.
- PAUL V. HALE (1963)
Professor of English
A.B., Canisius College; A.M., Cornell
University; Ph.D., New York
University.
- DAVID HARKER (1967)
Adjunct Professor of Physics
B.S., University of California; Ph.D.,
California Institute of Technology.
- FRANK K. HARMAN (1955)
*Professor of Physics and Chairman
of the Department*
B.A., B.Sc., M.Sc., Ph.D., Ohio State
University.
- JAMES D. HAYNES (1967)
Professor of Biology
B.S.Ed., Southeast Missouri State
College; M.S., University of Tennessee;
Ph.D., Iowa State University.
- CARYL G. HEDDEN (1958)
Professor of Education
B.S. Ed., State University College at
Buffalo; M.S., University of Michigan;
Ed.D., State University of New York
at Buffalo.
- RUTH E. HEINTZ (1965)
Associate Professor of Mathematics
B.A., M.A., University of Buffalo;
Ed.D., State University of New York
at Buffalo.
- LYLE H. HEMINK (1962)
Professor of Education
Ed.B., State Teachers College at
Fredonia; Ed.M., Ed.D., State
University of New York at Buffalo.
- KEITH M. HENDERSON (1969)
*Professor of Political Science and
Chairman of the Department*
B.A., Occidental College; M.S., D.P.A.,
University of Southern California.
- DONALD A. HESS (1964)
Professor of Communication Disorders
B.S.Ed., Clairion State College; M.Ed.,
D.Ed., Pennsylvania State University.

DONALD R. HETZNER (1970)
Assistant Professor of Social Studies Education
A.A., Illinois Valley Community College; B.A., Shimer College; M.A., Northern Illinois University; Ed.D., State University of New York at Buffalo.

JOSEPH K. HICHAR (1970)
Professor of Biology and Dean, Faculty of Natural Sciences
B.S., University of Pittsburgh; M.S., Pennsylvania State University; Ph.D., Harvard University.

JOSEPH G. HITREC (1967)
Associate Professor of English
Diploma, B.A., M.A., Royal University, Zagreb, Yugoslavia.

EMIL H. HOCH (1966)
Professor of Industrial Arts and Chairman of Professional and Related Services Department
B.S.Ed., State University College at Buffalo; M.A., Ball State University; Ed.D., University of Maryland.

FRANK A. HOFFMAN (1966)
Associate Professor of English
A.B., A.M., Bucknell University; Ph.D., Indiana University.

MELVIN J. HOFFMAN (1968)
Assistant Professor of English
B.S., M.A., Illinois Institute of Technology.

FREDERICK J. HOLLISTER (1948)
Professor of Sociology
A.B., Union College; M.A., New York State College for Teachers at Albany; Ph.D., Syracuse University.

SAUL J. HOROWITZ (1960)
Associate Professor of Art Education
Diploma, Society of Arts and Crafts; B.S.Ed., Wayne State University; M.F.A., Cranbrook Academy of Art.

JULIUS J. HUBLER (1948)
Professor of Design
B.S., Southeast Missouri State College; M.A., Ed.D., Columbia University.

IRENE M. HULICKA (1967)
Professor of Psychology
B.Ed., University of Alberta, Canada; B.A., Honours Degree, M.A., University of Saskatchewan, Canada; Ph.D., University of Nebraska.

THERESA R. HUMPHREYVILLE (1968)
Professor of Human Development, Family and Community Relations and Director of Caudell Division
B.Sc., Ohio State University; M.Sc., New York University; Ed.D., Teachers College, Columbia University.

IVOR ILMET (1967)
Associate Professor of Chemistry
A.B., Ph.D., New York University.

HADAR ISSEROFF (1968)
Associate Professor of Biology
B.S., Brooklyn College; M.S., Ph.D., Purdue University.

S. JAMES JAKIEL (1963)
Associate Professor of English
B.S.Ed., M.S.Ed., State University College at Buffalo.

CLEVELAND E. JAUCH, JR. (1966)
Associate Professor of English
A.B., Princeton University; M.A., Columbia University; M.A., Ph.D., Yale University.

LAYMAN JONES, JR. (1966)
Professor of Art Education
B.A., M.A., University of Tulsa; D.Ed., Pennsylvania State University.

BILL KALTSOUNIS (1969)
Assistant Professor of Mathematics
B.S., Middle Tennessee State University; M.S.Ed., State University College at Oswego; M.S., Atlanta University; Ed.D., University of Georgia.

GEORGE L. KALTOUNIS (1963)
Professor of Education
B.A., M.A., Ph.D., University of Michigan.

ESTELLE M. KANE (1959)
Associate Professor of Human Development, Family and Community Relations
B.S., Kent State University; M.A., State University of Iowa.

JAMES M. KEECH, JR. (1965)
Assistant Professor of English
A.B., University of North Carolina; M.A., Ph.D., Louisiana State University.

AFTAB A. KHAN (1967)
Associate Professor of Education
B. Tchg., Muslim University, India; M.S.Ed., University of Wisconsin; Ed.D., University of Maryland.

NORMA A. KLAYMAN (1964)
Professor of Foreign Language
B.A., M.A., State University at Albany; Ed.D., University of Buffalo.

ARTHUR F. KLEINFELDER (1968)
Instructor in Fine Arts
B.S., M.F.A., Pratt Institute.

HENRY KLOMP (1955)
Professor of English
A.B., Calvin College; A.M., Ph.D., University of Michigan.

MANNY T. KOGINOS (1967)
Associate Professor of History
B.A., Bowling Green State University; M.A., Ph.D., American University.

ROBERT H. KOHLER (1966)
Professor of Physics
B.S., Ph.D., Massachusetts Institute of Technology.

MATTHEW B. KRANTZ (1970)
Assistant Professor of Industrial Arts
B.A., Montclair State College; M.Ed., D.Ed., Texas A & M University.

LESLIE R. KRIMS (1969)
Assistant Professor of Fine Arts
B.F.A., Cooper Union; M.F.A., Pratt Institute.

THEODORE W. KURY (1963)
Professor of Geography
B.A., Montclair State College; M.A., Ph.D., Louisiana State University.

JAMES A. LAHREN (1970)
Professor of Vocational Technical Education
B.S., Moorhead State College; M.Ed., University of North Dakota; Ed.D., State University of New York at Buffalo.

CHARLES P. LaMORTE (1955)
Professor of Education
B.A., M.A., Ed.D., Columbia University.

DAVID E. LAMPE (1969)
Assistant Professor of English
B.A., Buena Vista College; M.A., Ph.D., University of Nebraska.

RICHARD H. LAMPKIN (1950)
Professor of General Science
A.B., B.Ed., M.Ed., University of Cincinnati; Ph.D., Columbia University.

HENRY J. LANG (1968)
Assistant Professor of History
B.A., St. Vincent College; M.A., Duquesne University; Ph.D., Indiana University.

GEORGE M. LAUG (1949)
Professor of Biology
B.S., M.S., Ph.D., Syracuse University.

SAMUEL L. LAWANI (1970)
Assistant Professor of Chemistry
B.S., Morehouse College; Ph.D., Howard University.

CHARLES R. LEFCOURT (1964)
Associate Professor of English
B.S., M.A., New York University; Doct., University of Paris.

DONALD A. LEUSCHEL (1966)
Assistant Professor of Foreign Language
B.A., University of Puerto Rico; M.A., Ph.D., Indiana University.

ANTHONY J. LEWIS (1970)
Assistant Professor of English
B.A., Rutgers University; M.A., Ph.D., University of Wisconsin.

MYRON E. LEWIS, JR. (1962)
Professor of Industrial Technology, Chairman of the Department, and Director, Technology Division
B.S., M.S., State University College at Oswego; Ed.D., State University of New York at Buffalo.

WILLIAM S. LICATA (1959)
Director, Experimental Curriculum Development and Evaluation
B.S.Ed., State University College at Buffalo; M.Ed., Ed.D., State University of New York at Buffalo.

EDNA M. LINDEMANN (1946)
Professor of Design and Curator, Burchfield Center
B.S., University of Buffalo; M.A., Northwestern University; Ed.D., Columbia University.

CHEN-TUNG LIU (1969)
Associate Professor of Mathematics
B.Ed., Taiwan Normal University; B.S.,
University of Oregon; Ph.D.,
University of Rochester.

NICHOLAS J. LoCASCIO (1968)
Assistant Professor of Biology
B.S., Brooklyn College; M.S., Ph.D.,
Pennsylvania State University.

HAROLD R. LOFGREN (1949)
Professor of Art Education
B.S., Miami University; M.A., Teachers
College, Columbia University.

FRANKLIN C. MacKNIGHT (1961)
Professor of General Science
Ph.B., Ph.D., University of Chicago.

HORACE MANN (1953)
*Director of Exceptional Children
Education Division*
A.B., Brooklyn College; A.M.,
Teachers College, Columbia
University; Ph.D., Pennsylvania State
University.

PAUL D. MARTIN (1961)
Professor of Fine Arts
B.A., M.F.A., Southern Illinois
University.

ANNA A. MARTORANA (1946)
Professor of Education
B.S.Ed., State University College at
Buffalo; M.A., Columbia University;
Ph.D., University of Minnesota.

KISHIO MATOBA (1965)
Associate Professor of Art Education
B.S., M.S., University of Wisconsin.

RICHARD J. McCOWAN (1968)
Professor of Education
B.A., St. John's College;
M.A., Niagara University; Ph.D., St.
John's University.

JAMES R. McDONNELL (1964)
*Associate Professor of History and
Chairman of the Department*
B.S., State University College at
Fredonia; M.S.Ed., State University
College at Buffalo; Ph.D., University
of Wisconsin.

G. ALLEN McFARREN (1965)
*Professor of Secondary Social Studies
Education*
B.A., Muskingum College; M.Ed., Kent
State University; Ph.D., Ohio State
University.

ROBERT F. MEHL, JR. (1966)
Associate Professor of English
B.A., College of Wooster; M.A., Ed.D.,
State University of New York at
Albany.

DANIEL T. MELOON (1966)
Associate Professor of Chemistry
B.A., M.A., University of Buffalo;
Ph.D., State University of New York at
Buffalo.

REX MILLER (1957)
Professor of Industrial Arts
B.A., Iowa State Teachers College;
M.A., Colorado State College of
Education; Ed.D., University of
Buffalo.

BENJAMIN H. MIN (1964)
Professor of History
B.A., University of Wisconsin; M.A.,
Ph.D., University of Massachusetts.

ROBERT E. MOISAND (1960)
Associate Professor of Biology
B.S., M.S., Northern Illinois University;
Ph.D., University of Kentucky.

M. DUANE MONGERSON (1968)
Assistant Professor of Industrial Arts
B.S., University of Nebraska; M.E.,
Kent State University; Ed.D.,
University of Nebraska.

MABEL D. MONTGOMERY (1958)
Professor of Mathematics
A.B., Houghton College; M.A., Ph.D.,
University of Buffalo.

JAMES J. MOONEY (1963)
Professor of Industrial Arts
B.S., Ellendale State Teachers College;
M.E., Colorado State University;
Ed.D., University of Maryland.

THOMAS J. MORRISEY (1967)
Professor of Industrial Arts
B.S., M.S., State University College at
Oswego; C.A.S., University of
Rochester; Ed.D., University of
Missouri.

THOMAS E. MOTT (1967)
Professor of Mathematics
A.B., Union College; A.M., University
of Pennsylvania; Ph.D., Pennsylvania
State University.

JOHN D. MULHERN (1967)
*Professor of Education and Director of
Education Division*
A.B., Boston College; M.Ed., Massa-
chusetts State College; Ph.D., University
of Wisconsin.

VALENTINE J. NADOLINSKI (1947)
Professor of Biology
B.A., M.A., University of Buffalo.

EMERSON E. NEUTHARDT (1946)
Professor of Industrial Arts
B.S., State University College at
Oswego; M.A., New York University;
Ed.D., State University of New York
at Buffalo.

EDWARD J. NEWBERGER (1970)
Assistant Professor of Mathematics
B.S., City College of New York;
Ph.D., Indiana University.

NORMAN J. NIESEN (1966)
Professor of Mental Retardation
B.S., Wisconsin State College; M.A.,
Columbia University; Ed.D., University
of Northern Colorado.

MAE O'BRIEN (1931)
Professor of Education
B.S., M.A., Ph.D., Teachers College,
Columbia University.

WILLIAM H. OLDENBROOK (1968)
*Associate Professor of Foreign
Language*
B.A., University of Rochester; M.A.,
University of Wisconsin; Ph.D.,
Harvard University.

KI-CHOUL OUM (1967)
Professor of Mathematics
B.S., M.S., Yonsei University, Korea;
Ph.D., Syracuse University.

JOHN A. PALMER (1960)
Associate Professor of Education
B.S.Ed., State University College at
Buffalo; M.A., Ph.D., State University
of New York at Buffalo.

HOWARD H. PARK (1969)
Associate Professor of Political Science
B.A., Gustavus Adolphus College;
M.A., Ph.D., University of Minnesota.

GERALD O. PAYNE (1969)
Professor of Education
B.A., Yale University; B.Church Mus.,
University of Dubuque; Ph.D.,
University of Wisconsin.

LOIS W. PEARSON (1960)
Associate Professor of Education
B.S.Ed., M.S.Ed., State University
College at Buffalo; Ed.D., University
of Rochester.

ELIZABETH G. PENN (1947)
Professor of Education
B.S., New Jersey State Teachers
College; M.A., Ed.D., Teachers
College, Columbia University.

JULIA C. PIQUETTE (1952)
*Professor of Speech and Theatre Arts
and Chairman of the Department*
B.S., M.A., Ph.D., Northwestern
University.

ARTHUR W. PITTS, JR. (1963)
Associate Professor of English
A.B., Princeton University; A.M.,
Catholic University of America; Ph.D.,
Louisiana State University.

JOEL S. POETKER (1970)
*Assistant Professor of Social
Studies Education*
A.B., Muskingum College; M.A.T.,
Miami University.

LEONARD J. POLESZAK (1956)
Professor of Education
B.S.Ed., State University College at
Buffalo; Ed.M., University of Buffalo;
Ed.D., Michigan State University.

FREDERICK W. PRICE (1967)
Associate Professor of Biology
B.Sc., University of Bristol, England;
Ph.D., King's College, University of
London, England.

RALPH J. RAICO (1967)
Assistant Professor of History
B.A., City College of New York;
Ph.D., University of Chicago.

ABDUL H. RAOOF (1967)
Associate Professor of Political Science
B.A., University of Bagdad; M.P.A.,
Ph.D., New York University.

JOHN E. REEDY (1965)
Professor of English
A.B. in Th., Gordon College; B.D.,
Gordon Divinity School; M.Ed.,
University of Maine; D.Ed., Boston
University.

ISAIAH REID (1970)

Associate Professor of Education
B.S., Ed.M., Boston University;
Ed.D., Cornell University.

RONALD M. REUSS (1964)

Associate Professor of Biology
B.A., M.A., Ed.D., State University of
New York at Albany.

WILLIAM REYNOLDS (1968)

*Professor of Vocational Technical
Education and Director of the
Division*
B.S., State University College at
Oswego; M.Ed., Pennsylvania State
University; Ed.D., Cornell University.

MICHAEL P. RICCARDS (1970)

Assistant Professor of Political Science
B.A., M.A., M. Phil., Ph.D., Rutgers
University.

JOHN A. ROEDER (1962)

*Professor of Vocational Technical
Education*
B.Ed., M.Ed., Ed.D., University of
Buffalo.

DAVID A. ROGERS (1950)

Associate Professor of History
B.A., M.A., University of Buffalo;
Ph.D., University of Wisconsin.

ELLSWORTH M. RUSSELL (1948)

*Professor of Industrial Arts and
Chairman of Communications &
Power Department*
B.Ed., Eastern Illinois University; M.S.,
Iowa State University; Ed.D.,
Pennsylvania State University.

TERESA C. SALAS (1965)

Professor of Spanish
M.Ed., Kent State University; M.A.,
Ph.D., Case Western Reserve
University.

DONALD J. SAVAGE (1963)

Professor of Speech and Theatre Arts
B.A., Hamline University; M.A., Ph.D.,
University of Minnesota.

KENNETH L. SCHANK (1970)

*Director of Industrial Arts Education
Division*
B.S., University of Wisconsin-Stout;
M.S., Bradley University; Ed.D.,
University of Maryland.

WINIFRED E. SCHASEL (1963)

*Associate Professor of Environmental
and Consumer Studies*
B.S., Bowling Green State University;
M.S., Cornell University.

WILLIAM C. SCHEFLER (1958)

Professor of Biology
B.A., Ed.M., University of Buffalo;
Ed.D., State University of New York
at Buffalo.

NED V. SCHIMIZZI (1968)

Associate Professor of Education
B.S., M.S., Ed.D., Indiana University.

MARGARET M. SCHRADER (1963)

*Associate Professor of Human
Development, Family and
Community Relations*
B.S. Ed., State University College at
Buffalo; Ed.M., State University of
New York at Buffalo.

STANFORD J. SEARL, JR., (1969)

Assistant Professor of English
A.B., Syracuse University; M.A., State
University of New York at Buffalo;
Ph.D., Syracuse University.

HOWARD G. SENGBUSCH (1951)

Professor of Biology
B.S. Ed., State University College at
Buffalo; Ed.M., State University of
New York at Buffalo; M.S., Ph.D.,
New York University

CARL K. SEYFERT (1967)

*Associate Professor of Geology and
Chairman of the Department of
Geosciences*
B.A., Vanderbilt University; Ph.D.,
Stanford University.

GEORGE R. SHERRIE (1947)

Professor of Education
B.S. Ed., State University College at
Buffalo; Ed.M., State University of
New York at Buffalo; Ed.D., Syracuse
University.

J. STEPHEN SHERWIN (1956)

Professor of English
B.S., University of Wisconsin; M.A.,
Teachers College, Columbia University;
Ed.D., New York University.

FRANCIS T. SIEMANKOWSKI (1964)

Professor of General Science
B.S. Ed., State University College at
Buffalo; M.Ed., University of Buffalo;
Ed.D., State University of New York
at Buffalo.

NOEL SIMMONS (1959)

Professor of Chemistry
B.S., City College of New York; M.S.,
Ohio State University; Ph.D.,
University of Minnesota.

ROBERT B. SIMPSON (1966)

Dean, Faculty of Professional Studies
A.A., University of California; A.B.,
M.A., Stanford University; Ed.D.,
Teachers College, Columbia University.

SURJIT SINGH (1967)

Associate Professor of Chemistry
B.Sc., (Hons), Kh. College, Amritsar,
India; M.Sc., (Hons), Punjab
University, India; Ph.D., St. Louis
University.

JULIUS P. SLAVENAS (1962)

Assistant Professor of History
B.A., M.A., University of Illinois;
Ph.D., University of Chicago.

JOHN J. SLIVKA (1969)

Associate Professor of Mathematics
B.S., Canisius College; M.A., Ph.D.,
State University of New York at
Buffalo.

ALDEN E. SMITH (1965)

*Assistant Professor of Biology and
Chairman of the Department*
B.A., University of Colorado; Ed.M.,
University of Buffalo; M.S., Syracuse
University; Ed.D., State University of
New York at Buffalo.

EDWARD O. SMITH, JR. (1963)

Associate Professor of History
B.A., Muhlenberg College; M.A.,
Ph.D., Lehigh University.

SIGMUND A. SMITH (1964)

*Professor of Mathematics and Vice
President for Administration*
B.S., State University of New York at
Albany; M.S., State University College
at Brockport; M.S., University of
Illinois; Ed.D., Pennsylvania State
University.

RALPH D. SOLLARS (1965)

*Professor of Education and
Associate Dean of Professional
Studies*
B.S., Ohio State University; M.Ed.,
Bowling Green State University;
Ph.D., Ohio State University.

ADRIAN SOLOMON (1968)

*Professor of Human Development,
Family and Community Relations
and Chairman of the Department*
A.B., M.A., University of Kentucky;
Ph.D., Cornell University.

ROBERT SQUERI (1955)

Professor of Fine Arts
B.A., Brooklyn College; M.A., Ed.D.,
Columbia University.

H. GENE STEFFEN (1946)

Director of Instructional Resources
B.S. Ed., State University College at
Buffalo; Ed.M., State University of
New York at Buffalo; Ph.D., Cornell
University.

ROBERT C. STEIN (1965)

Professor of Biology
B.A., St. Olaf College; M.S., Ph.D.,
Cornell University.

BENJAMIN STEINZOR (1953)

Professor of Design
B.S., New York University; Ed.M.,
Alfred University; Ph.D., University
of Southern California.

SAMUEL T. STERN (1962)

Professor of Mathematics
B.A., M.A., Ph.D., University of
Buffalo.

FRANCIS G. STEWART (1962)

*Professor of Human Development,
Family and Community Relations*
A.B., Grove City College; Th.B.,
Western Theological Seminary; M.Ed.,
Ph.D., University of Pittsburgh.

RAYMOND P. STONE (1959)

Professor of Political Science
B.A., University of Massachusetts;
M.A., Ph.D., Princeton University.

RUTH SUGARMAN (1946)

Professor of Education
B.S. Ed., State Teachers College at
Buffalo; M.A., Northwestern
University; Ed.D., University of
Buffalo.

HENRY J. SUSTAKOSKI (1964)
*Professor of English and Chairman of
the Department*
B.A., M.A., State University of New
York at Buffalo.

I. JOYCE SWARTNEY (1968)
Assistant Professor of General Science
B.S., University of Detroit; M.S.,
University of Pennsylvania; Ph.D.,
University of Wisconsin.

ROBERT A. SWEENEY (1966)
*Associate Professor of Biology and
Director of Great Lakes Laboratory*
B.S., State University of New York at
Albany; M.S., Ph.D., Ohio State
University.

IRVING H. TESMER (1957)
Professor of Geology
B.A., M.A., University of Buffalo;
Ph.D., Syracuse University.

CLEMENT T. TETKOWSKI (1949)
*Professor of Design and Chairman of
the Department*
B.S., New Jersey State Teachers
College; M.A., Ed.D., Teachers
College, Columbia University.

DAVID H. THIELKING (1948)
Professor of Physics
B.S., St. Lawrence University; Ed.M.,
Ed.D., State University of New York
at Buffalo.

GEORGE V. TOMASHEVICH (1968)
Professor of Anthropology
B.A., Roosevelt University; M.A.,
Ph.D., University of Chicago.

GUY B. TORCHINELLI (1959)
Associate Professor of Mathematics
B.S., Hobart College; M.S., University
of Illinois.

RICHARD TOWNE (1966)
*Professor of Learning and Behavioral
Disorders and Chairman of the
Department*
B.S., State University College at
Fredonia; M.S., Canisius College;
M.A., Ph.D., Michigan State
University.

C. STEPHEN TRITT (1966)
Assistant Professor of English
A.B., Cornell University; Ph.D.,
University of Washington.

NORMAN F. TRUESDALE (1947)
*Professor of Art Education and
Chairman of the Department.*
B.S.Ed., State University College at
Buffalo; M.Ed., Ed.D., State University
of New York at Buffalo.

REN-DEH TUAN (1962)
Professor of General Science
B.S., Cheeloo University; M.S., Ed.D.,
University of Denver.

MARVIN TUNIS (1965)
Associate Professor of Chemistry
A.B., Hunter College of New York;
Ph.D., University of Illinois.

JOHN URBAN (1946)
Professor of Biology
B.S., Kent State University; A.M.,
Ph.D., Teachers College,
Columbia University.

ROLLAND VAN HATTUM (1963)
*Professor of Communication Disorders
and Chairman of the Department*
B.S., Western Michigan University;
M.S., Ph.D., Pennsylvania State
University.

CONRAD C. VOGLER (1964)
Assistant Professor of Sociology
B.S., M.S., State University College at
Brockport; Ph.D., State University of
New York at Buffalo.

MARY C. VUCINICH (1947)
Professor of English
B.S., M.A., University of Cincinnati;
Ph.D., State University of Iowa.

INEZ M. WARE (1959)
Professor of Education
B.A., Occidental College; M.A., Ed.D.,
Teachers College, Columbia
University.

HENRY J. WATTS (1970)
Professor of Sociology
B.A., M.A., State University of New
York at Buffalo; Ph.D., Michigan State
University.

RAYMOND W. WAXMONSKY (1968)
Assistant Professor of Geography
B.S., University of Idaho; M.A.,
University of Illinois.

NORMAN F. WEAVER (1950)
Professor of History
B.A., Ball State Teachers College; M.S.
Ph.D., University of Wisconsin.

GENE S. WELBORN (1958)
Professor of Sociology
B.S., University of Illinois; M.S.,
Indiana University; Ed.D., New York
University.

JAMES W. WELLS (1968)
Assistant Professor of Physics
B.S., Case-Western Reserve University;
Ph.D., State University of New York at
Buffalo.

MILDRED C. WELLS (1957)
Professor of Education
B.A., State University of Iowa; M.A.,
Ph.D., Ohio State University.

FREDERICK R. WEST (1969)
Assistant Professor of Geosciences
B.A., Reed College; B.S., Massachusetts
Institute of Technology; M.A., Ph.D.,
Indiana University.

RICHARD A. WIESEN (1964)
*Professor of Mathematics and
Chairman of the Department*
B.S.Ed., Clarion State Teachers
College; M.S., Syracuse University;
Ed.D., State University of New York
at Buffalo.

WALLACE T. WILLIAMS (1969)
*Associate Professor of Nutrition and
Food Science and Chairman of the
Department*
B.S., Southern University; M.S., North
Dakota State University; Ph.D.,
University of Maine.

DuWAYNE E. WILSON (1960)
Associate Professor of Design
B.S.Ed., M.S.Ed., State University
College at Buffalo.

MARGARET WILSON (1966)
Professor of Biology
B.A., Smith College; M.D., University
of Michigan Medical School.

JOSEPH F. WINCENC (1947)
Professor of Music
Mus.B., Oberlin College; Mus.M., State
Conservatory of Music, Prague,
Czechoslovakia; M.A., Teachers
College, Columbia University; L.H.D.,
(Hon.), Canisius College.

D. KENNETH WINEBRENNER
(1939)
Professor of Design
B.S., Indiana State Teachers College;
M.A., Ed.D., Teachers College,
Columbia University.

ROLAND WISE (1955)
Professor of Fine Arts
B.F.A., University of Manitoba; M.A.,
New York University.

WARREN A. WOLF (1971)
Dean, Faculty of the Arts
B.S., University of Oregon; M.F.A.,
Kansas City Art Institute.

EARL W. WOLFGRUBER (1960)
Professor of Design
Ed.B., University of Buffalo; Ed.M.,
State University of New York at
Buffalo.

WILLIAM D. WOODWORTH (1968)
Associate Professor of Education
B.S., M.S., State University College at
Oswego; Ed.D., State University of
New York at Buffalo.

RALPH YALKOVSKY (1962)
Professor of Oceanography
B.S., M.S., Ph.D., University of
Chicago.

BERNARD B. YORMAK (1963)
*Professor of Learning and Behavioral
Disorders*
B.S., Long Island University; M.S.,
University of Wisconsin; Ph.D.,
Pennsylvania State University.

DARRELL D. YOUNG (1960)
*Associate Professor of General Science
and Chairman of the Department*
B.A., Iowa State Teachers College;
M.A., Colorado State College; Ed.D.,
State University of New York at
Buffalo.

JOSEPH S. ZINGARO (1958)
Professor of Chemistry
B.S., State University College at
Geneseo; M.S., M.A., Ph.D., Syracuse
University.

INDEX

	Page		Page
Academic Regulations	9	Geosciences	48
Accreditation and Membership	83	Grading System	9
Administration	87	History	50
Administration and Supervision	68	History of the College	82
Admission	5	Home Economics Education	13, 15
Admission to Candidacy	7	Human Development, Family and Community Relations	16
Adviser	6	Incompletes	9
Anthropology	31	Industrial Arts Education	16
Art Education	25	Interdepartmental	22
Attendance Regulations	9	Latin American Studies	52
Behavioral Studies	70	Library	4
Biology	31	Local Council	86
Board of Trustees	86	Mathematics	53
Calendar	2	Maximum Student Load	8
Campus and Buildings	3	Mental Retardation	77
Chemistry	35	Music	29
Class Schedules	5	Nutrition and Food Science	14
Communication Disorders	79	Peace Corps	64
Course Numbering System	10	Philosophy	57
Credit and Eligibility	10	Physical Handicap	78
Cumulative Average	10	Physics	59
Curriculum and Instruction	73	Political Science	61
Curricula	5	Refunds	11
Design	26	Registration	6
Economics	37	Requirements for Degree	7, 10
Education	63	Safety Studies	22
Elementary Education	64	Sec. Ed.—Chemistry	36
English	38	Sec. Ed.—English	39
Environmental and Consumer Studies	14	Sec. Ed.—Mathematics	54
Exceptional Children Education	77	Sec. Ed.—Physics	59
Faculty	90	Sec. Ed.—Social Studies	67, 76
Faculty of Applied Science and Technology	13	Social Studies	61
Faculty of the Arts	25	Sociology	61
Faculty of Arts and Sciences	31	Speech and Theatre Arts	29
Faculty of Professional Studies	63	State University of New York	84
Financial Aid	12	Student Personnel Services	69
Fine Arts	28	Teacher Corps	63
Foreign Language	44	Tuition and Fees	11
Foundations of Education	75	Vocational Technical Education	20
General Science	46	Withdrawal	9
Geography	47		