GRADUATE SCHOOL OF EDUCATION

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T he Graduate School of Education offers graduate degree programs which provide professional preparation for those who aspire to serve in the roles of teacher, curriculum specialist or director, school principal, higher education administrator, college faculty, policy planning, consultant, and other positions of educational leadership.

DEGREE PROGRAMS

The Master of Education degree is offered in: Curriculum and Instruction (with two options: Graduate Program in Teaching, and English as a Second Language); Educational Administration; and Reading and Language.

The Certificate of Advanced Graduate Study is offered in: Curriculum and Instruction; Administration, Planning and Policy; and Reading and Language.

The Doctor of Education Degree is offered in: Mathematics and Science Education; Leadership in Schooling; and Language Arts and Literacy.

ADMISSION TO DEGREE PROGRAMS IN EDUCATION

Application:

In addition to the requirements for admission listed in this catalogue, applicants must file the following documents with the Graduate School:

1. A completed application form, available from the Graduate School Office.
2. Official transcripts from each undergraduate and graduate school previously attended. These official transcripts must be sent directly to the Graduate School by the colleges which the applicant attended. Transcripts sent by the applicant and copies of transcripts cannot be accepted.
3. An official copy of the applicant’s scores obtained on the Graduate Record Examination must be mailed directly to the Graduate School Office.
4. A two-page statement of purpose in which the candidate describes his/her experience and reasons for entering a graduate level program.
5. Letters of recommendation from three persons who are qualified to evaluate the applicant’s academic and professional abilities. The forms for these recommendations are contained in the admission packet.

Upon receipt, the Graduate School will forward the above documents to the Graduate School of Education. All decisions on admissions are made by the Admissions and Standards Committee of the Graduate School of Education and forwarded to the Graduate School for final action. Applicants approved for admission to all graduate programs in the Graduate School of Education must meet general education prerequisites consistent with the standards of the National Council for Accreditation of Teacher Education. Applicants who are accepted for admission will be informed of any general education deficiencies by letter from the Graduate School of Education.

Transfer Credit
M.Ed., C.A.G.S., and Ed.D. Programs

The Graduate School of Education follows the Graduate School requirements regarding the transfer of credit (see front of catalogue) with the following clarifications: no more than nine (9) credits for the Graduate Program in Teaching, no more than twelve (12) credits for other Masters degrees, nine (9) credits for C.A.G.S. or twenty four (24) credits for Doctoral programs may be transferred from other accredited institutions of higher education. Only courses with grades of B or better, completed within five years of matriculation, may be transferred.

Graduate Advisor

A student who accepts admission will be assigned to a faculty advisor in the Graduate School of Education. The advisor’s responsibility is to: 1) provide academic counseling to the student relative to the program of study and 2) periodically evaluate the student’s academic progress, making recommendations as necessary to the Admissions and Standards Committee concerning the student’s continuation, dismissal, or qualifications for a degree.

Degree Requirements

Each graduate student is personally responsible for complying with all rules and regulations of the Graduate School and the Graduate School of Education, and for fulfilling all degree requirements.

MASTER OF EDUCATION (M.Ed.)

1. To qualify for admission to a graduate degree program at the Master of Education level, an applicant must have completed a baccalaureate degree program with a scholastic record that gives evidence of ability to succeed in graduate work.
2. In order to qualify for a Master of Education degree, each candidate must meet the following requirements:
   3. Complete a minimum of thirty (30) credits of required course work in a specific degree program.
4. Complete all course requirements for the degree program at this University. A maximum nine (9) credits for the Graduate Program in Teaching and twelve (12) credits for other Masters degrees taken at another accredited institution is the only exception granted.
5. Complete satisfactorily the specified internship and/or field practicum, and appropriate seminar, under supervision of a designated faculty member in the Graduate School of Education.
6. Complete all course requirements for the degree with a cumulative grade-point average of B or better.
7. Complete the degree within five years of the date of admission.

A. Curriculum and Instruction (M.Ed.)

Designed for certified teachers who will provide instructional leadership in the role of supervisor, department chairperson, or curriculum specialist. The core of the Master of Education degree consists of distribution requirements in the following areas: Foundations of Education, Research and Evaluation, Specialization, and Practicum. Course offerings which apply to each area are listed below. A minimum of thirty (30) credits is required for the Master of Education in Curriculum and Instruction degree.

   Foundations of Education (minimum 6 credits)
   Two 01 courses should be selected with the advice and approval of the faculty advisor.

Research and Evaluation (minimum 3 credits)

   One course should be selected
   07.540 Research Methods for Practitioners
   07.640 Research Methods
   07.642 Program Evaluation
   Specialization (minimum 9 credits)
   04.636 Theory and Research in Curriculum
   04.638 Curriculum Design K-12
   05.639 Planning Process
   Electives (minimum 9 credits)
Curriculum and Instruction (M.Ed.)

Option 1: The Graduate Program in Teaching
Designed for individuals who seek initial certification. The program includes provisional certification with advanced standing in the Commonwealth of Massachusetts.

Certification opportunities are available in the following areas: Elementary Education, High School or Middle School English, Mathematics, History, Social Studies, Biology, Chemistry, Earth Science, Physics, Music Education, and Health Education. Additionally, Elementary Education candidates may be eligible to seek certification in early childhood or as a middle school generalist.

Requirements
Successful applicants for the elementary program must have an undergraduate major or a minimum of 24 credits in an arts or science academic content area. In addition, the applicant must meet prerequisite requirements in mathematics, science, history, English, art or music, and health.

Applicants for the secondary program must have a degree or equivalent in the content area they wish to teach.

Applicants are expected to achieve a minimum grade point average of 3.0 in undergraduate work. Satisfactory scores on the Graduate Record Exam are also required. All candidates must pass the Communication and Literacy Test and a Subject Test of the Massachusetts Educator Certification Tests to qualify for Massachusetts certification.

Elementary Education (1-6)

Foundations of Education (minimum 6 credits)
01.501 Diversity in the Classroom
01.502 Child Development and Assessment of Learning: Elementary

Specialization: Elementary Teaching Methods (minimum 15 credits)
02.556 Reading and Reading Disabilities
02.551 Mathematics Education
02.552 Social Studies Education
02.553 Language Arts and Literacy Education
02.563 Science Education

Practicum (minimum 9 credits)
In order to proceed to the practicum, the candidate must have a grade point average of 3.25 or better, and pass the Communication and Literacy portion of the Massachusetts Educator Certification test.

02.578 Practicum and Analysis of Teaching Seminar: Elementary

Elementary/Early Childhood (1-6)(preK-3)
Foundations of Education (minimum 6 credits)
01.501 Diversity in the Classroom
01.502 Child Development and Assessment of Learning: Elementary

Specialization: Elementary Teaching Methods (minimum 18 credits)
02.556 Reading and Reading Disabilities
02.551 Mathematics Education
02.552 Social Studies Education
02.553 Language Arts and Literacy Education
02.563 Science Education

One Early Childhood Course
Practicum (minimum 15 credits)
In order to proceed to the practicum, the candidate must have a grade point average of 3.25 or better, and pass the Communication and Literacy portion of the Massachusetts Educator Certification test.

02.578 Practicum and Analysis of Teaching Seminar: Elementary

02.598 Practicum: Early Childhood

Elementary/ Middle School (1-6)(5-9): Classroom Generalist
Foundations of Education (minimum 6 credits)
01.501 Diversity in the Classroom
01.502 Child Development and Assessment of Learning: Elementary

Specialization: Elementary Teaching Methods (minimum 18 credits)
02.556 Reading and Reading Disabilities
02.551 Mathematics Education
02.552 Social Studies Education

Secondary

Practicum (minimum 15 credits)
In order to proceed to the practicum, the candidate must have a grade point average of 3.25 or better, and pass the Communication and Literacy portion of the Massachusetts Educator Certification test.

02.578 Practicum and Analysis of Teaching Seminar: Elementary

Secondary

High School (9-12): Subject Specialist

Foundations of Education (minimum 9 credits)
01.501 Diversity in the Classroom
01.502 Child Development and Assessment of Learning: Secondary

One other foundations course with the approval of a faculty advisor.

Specialization (minimum 12 credits)
One graduate course in field of certification
02.xxx Curriculum and Teaching in Major Area

02.580 Interdisciplinary Methods
One elective with the approval of a faculty advisor.

Practicum (minimum 9 credits)
In order to proceed to the practicum, the candidate must have a grade point average of 3.25 or better, and pass the Communication and Literacy portion of the Massachusetts Educator Certification test.

02.xxx Practicum and Analysis of Teaching Seminar: Secondary

High School/ Middle School (9-12)(5-9): Subject Specialist

Foundations of Education (minimum 9 credits)
01.501 Diversity in the Classroom
01.502 Child Development and Assessment of Learning: Secondary

One other foundations course with the approval of a faculty advisor.

Specialization (minimum 12 credits)
One Middle School Course
02.xxx Curriculum and Teaching in Major Area

02.580 Interdisciplinary Methods
One elective with the approval of a faculty advisor.
of a faculty advisor.

Prerequisites (minimum 15 credits)

In order to proceed to the practicum, the candidate must have a grade point average of 3.25 or better.

02.597 Practicum: Middle School

Middle School (5-9): Subject Specialist

The requirements are identical to those for the combined high and middle school certification, but only ONE practicum (middle school) is required.

CURRICULUM AND INSTRUCTION (M.ED.)

Option 2

English as a Second Language

 Designed for teachers who hold a first certification and seek an additional certificate as an English as a Second Language teacher.

Prerequisites

For certification as an ESL teacher, the Massachusetts Department of Education requires: six course credits in American Literature, six course credits in English Literature and passing an English language proficiency examination.

Foundations of Education (minimum 9 credits)

02.502 Sociocultural Perspectives of Teaching ESL

02.514 Education of Linguistically and Culturally Diverse Students

02.517 Community Organization and Parental Participation

Certain courses may be substituted for required foundations courses with the advice and written approval of a faculty advisor.

Research and Evaluation (minimum 3 credits)

One course should be selected

02.508 Approaches to Second Language Testing and Assessment

Specialization (minimum 15 credits)

02.501 First and Second Language Acquisition

02.503 Methods of Second Language Instruction

02.504 Curriculum and Adaptation in Teaching ESL

02.505 Language Arts Instruction for ESL Teachers

02.509 The Bilingual Child with Special Needs

Electives (1 course: minimum 3 credits)

Certain courses may be substituted for required specialization courses with the advice and written approval of a faculty advisor.

Practicum (minimum 6 credits)

02.515 ESL Practicum and Seminar (for those seeking ESL certification)

B. Educational Administration (M. Ed.)

The master’s degree program in Educational Administration is designed to meet the needs of those planning careers as practitioners in a variety of middle-level administrative areas in public and private educational institutions as well as community organizations and various human service agencies. The program also serves as the initial sequence of study for those planning further graduate study in administration in preparation for senior positions as administrators, planners, researchers, or theorists.

Professional Experience

Each candidate for the degree in Educational Administration is required to complete at least three years full time employment in an educational institution or a human service agency prior to completion of degree requirements.

Students seeking certification as Principal must be certain that all courses required for certification are completed.

Foundations of Education (minimum 6 credits)

Two 01 courses should be selected with the advice and approval of the faculty advisor.

Research and Evaluation (minimum 3 credits)

One course should be selected

07.540 Research Methods for Practitioners

07.640 Research Methods

07.642 Program Evaluation

Specialization in Administration, Planning, and Policy (minimum 12 credits)

05.620 Introduction to Educational and Human Service Administration

05.639 Planning Process

05.640 Analysis of Educational and Human Service Organizations

05.642 Principles of Supervision (or 05.643)

05.643 Principalship (or 05.642)

Electives (minimum 6 credits)

To be selected with the advice and approval of the faculty advisor.

Practicum (minimum 3 credits)

05.644 Educational Administration (non-certification)

05.646 School Principal N-6

05.647 School Principal 5-9

05.648 School Principal 9-12

C. Reading and Language (M.Ed.)

Designed for candidates who hold a teaching certificate in either elementary or secondary English education. The degree program requires thirty (30) credits of course work including six (6) credits in Practicum. The program prepares consultant teachers of reading and language curriculum supervisors. Students seeking certification as Consulting Teacher of Reading must be certain that all courses for certification are completed.

Prerequisites

Certification as an elementary or secondary English teacher. One undergraduate or graduate course concerning Developmental Reading Elementary and Developmental Reading Secondary. These prerequisite courses do not count toward the thirty (30) credits required for the Master of Education in Reading and Language degree.

Foundations of Education (minimum 3 credits)

One course should be selected

01.610 Theories of Learning

01.611 Cognition and Instruction

Research and Evaluation (minimum 3 credits)

One course should be selected

07.540 Research Methods for Practitioners

07.640 Research Methods

07.642 Program Evaluation

Specialization in Reading and Language (minimum 15 credits)

02.501 First and Second Language Acquisition

06.528 Clinical Assessment of Reading and Language Disabilities

06.530 Young Adult Literature

06.531 Organization and Supervision of Reading and Language Programs

06.549 Seminar in Reading and Language

Electives (minimum 3 credits)

To be selected with the advice and approval of a faculty advisor

Practicum (minimum 6 credits)

06.548 Practicum in Reading and Language
CERTIFICATE OF ADVANCED GRADUATE STUDY (C.A.G.S.)

To qualify for admission to a graduate program at the Certification of Advanced Graduate Study level, an applicant must have a master’s degree from an accredited college or university with a cumulative grade point average of not less than 3.0. Additionally, each candidate must meet the following requirements:

1. Complete a minimum of thirty credits of course work in the specified certificate program.
2. Complete all course requirements for the certificate program at this university. A maximum of 9 credits of course work transferred from another accredited institution is the only exception granted.
3. Complete all course requirements with a cumulative grade point average of B or better. No additional course credits may be permitted in order to achieve the grade point average of B or better required for the certificate.
4. Pass an area comprehensive examination.
5. Satisfactorily complete a Qualifying Paper as approved by his or her faculty committee.
6. Complete the program within five years of the date of admission.
7. It is expected that an approved outline for a Qualifying Paper will be completed during the Research Seminar and the completed paper submitted at least two weeks prior to the clearance date of the year that the student anticipates graduation.
8. Students must demonstrate competency in knowledge of research methods and computer literacy. This may be achieved by courses listed on transcripts, examinations or by other means approved by the student’s advisor. Those students unable to fulfill this area by the stated means should take a course or courses to develop these competencies. Courses taken will not accrue to C.A.G.S. credit.

Note: Students seeking Massachusetts certification as Supervisor/Director, Principal, or Consulting Teacher of Reading must also fulfill a special set of courses and practica. Students should consult with their advisors before beginning course work.

A. Curriculum and Instruction (C.A.G.S.)

Foundations (minimum 3 credits)
04.670 Issues in Curriculum and Instruction

Research and Evaluation (minimum 6 credits)
04.671 Research Seminar I in Curriculum and Instruction
04.672 Research Seminar II in Curriculum and Instruction

Specialization (minimum 12 credits)
04.636 Theory and Research in Curriculum and Instruction
04.638 Curriculum Design K-12
05.639 Planning Process
04.642 Politics of Curriculum Change

Electives (minimum 9 credits)
Three electives should be selected with the advice and approval of the student’s advisor. Students must pass a comprehensive examination in the area of Curriculum and Instruction.

Those who have completed C.A.G.S. specialization courses as part of their master’s degree program may meet the C.A.G.S. credit requirements by selecting other courses with the advice and approval of their advisor.

B. Administration, Planning, and Policy (C.A.G.S.)

Research and Evaluation (minimum 6 credits)
05.670 Research Seminar I in Administration, Planning, and Policy
05.671 Research Seminar II in Administration, Planning, and Policy

Specialization in Administration, Planning, and Policy (minimum 12 credits)
05.620 Introduction to Educational and Human Service Administration
05.639 Planning Process
05.640 Analysis of Educational and Human Service Organizations
05.642 Principles of Supervision or 05.643 Principalship

Electives (minimum 12 credits)
These courses should be selected with the advice and approval of the faculty advisor. Students must pass a comprehensive examination in the area of Administration, Planning, and Policy.

C. Reading and Language (C.A.G.S.)

Foundations (minimum 3 credits)
06.670 Issues in Reading and Language Instruction

Research and Evaluation (minimum 6 credits)
06.671 Research Seminar I in Reading and Language
06.672 Research Seminar II in Reading and Language

Specialization in Reading and Language (minimum 12 credits)
In consultation with the advisor, the student will select 12 credits of course work in the reading area.

Electives (minimum 9 credits)
Three courses should be selected with the advice and approval of the faculty advisor.

Students who have completed core courses in the master’s degree program may waive certain core requirements of the C.A.G.S. program. Courses should be selected with the advice and approval of the student’s advisor. Students must pass a comprehensive examination in the area of Reading and Language.

DOCTOR OF EDUCATION (Ed.D.)

To qualify for admission to a graduate program at the Doctor of Education level, an applicant must have earned a baccalaureate degree from an accredited college as well as a master’s degree appropriate to the intended field of specialization from an accredited college. A cumulative grade point average of no less than 3.0 is expected. A personal interview with the Graduate Coordinator, the Dean and/or the Academic Standards and Admissions Committee may also be required.

Degree Requirements

1. Complete a minimum of sixty (60) credits in the specified doctoral program, of which a minimum of nine (9) credits must be dissertation research. A maximum of six (6) credits of Advanced Research Seminar work may be counted toward dissertation research. Students may request for transfer a maximum of twenty four (24) credits of course work taken prior to matriculation at another accredited institution toward the doctoral degree.
2. Complete the stipulated course requirements for the degree program at this university.
3. Complete all course requirements for the degree with a cumulative grade point average of B or better.
4. Complete the residency requirement.
5. Satisfy the Computer Literacy
requirement.
6. Pass two (2) doctoral examinations.
7. Satisfactorily complete and defend a dissertation as approved by the candidate’s dissertation committee.
8. Complete the program within seven years from the date of admission.

Note: Students seeking Massachusetts certification as Supervisor/Director, Principal, or Consulting Teacher of Reading must fulfill a separate set of courses and practica. Students should consult with their advisors before beginning course work.

Core courses in doctoral programs are open only to students who are matriculated into a doctoral program, or with the specific permission of the instructor.

A. Mathematics and Science Education Doctoral Program (Ed.D.)

Foundations of Education (minimum 6 credits)
01.645 Perspectives and Visions of Schooling: I
01.646 Perspectives and Visions of Schooling: II

Research and Evaluation (minimum 9 credits)
07.701 Seminar in Data Analysis
07.702 Seminar in Research Methodology and Design
07.xxx An additional course approved by the faculty advisor.

Field of Specialization Requirements
1. Integration Requirements (minimum 9 credits)
04.622 Mathematics, Science, and the Educated Mind
04.614 Constructivist Perspectives in Mathematics and Science Education
04.617 Advances in Mathematics, Science and Technology Education

2. Concentration Requirements (minimum 15 credits)
04.626 Development of Concepts in Science (or 04.627)
04.627 Development of Concepts in Mathematics (or 04.626)
04.628 Reasoning and Problem Solving in Science (or 04.629)
04.629 Reasoning and Problem Solving in Mathematics (or 04.628)
Three additional 03 or 04 courses selected with the approval of the faculty advisor.

Electives (minimum 12 credits)
Four courses selected with the approval of the faculty advisor.

B. Leadership In Schooling Doctoral Program (Ed.D.)

Foundations of Education (minimum 6 credits)
01.645 Perspectives and Visions of Schooling I
01.646 Perspectives and Visions of Schooling: II

Research and Evaluation (minimum 9 credits)
07.701 Seminar in Data Analysis
07.702 Seminar in Research Methodology and Design
07.xxx An additional course approved by advisor.

Field of Specialization Requirements (minimum 9 credits)
01.636 Sociology of Educational Communities
05.650 Instructional Leadership and School Reform
05.652 Managing Change and Conflict in Schools

Electives (27 credits)
Twenty-seven semester hours will be selected by the student with the advice and approval of the faculty advisor to provide appropriate specialization in a professional field.

Dissertation Research (minimum 9 credits)

C. Language Arts and Literacy Education Doctoral Program (Ed.D.)

Foundations of Education (minimum 6 credits)
01.645 Perspectives and Visions of Schooling I
01.646 Perspectives and Visions of Schooling: II

Research and Evaluation (minimum 9 credits)
07.701 Seminar in Data Analysis
07.702 Seminar in Research Methodology and Design
07.xxx An additional course approved by advisor.

Field of Specialization Requirements (minimum 9 credits)
06.670 Issues in Reading and Language Instruction
06.673 Curriculum Design and Instruction for English/Language Arts

Electives (27 credits)
Twenty-seven semester hours will be selected by the student with the advice and approval of the faculty advisor to provide appropriate specialization in a professional field.

Dissertation Research (minimum 9 credits)

COURSE DESCRIPTIONS

01.564 History of American Education (3-0-3) An analysis of the development of educational thought and practice in the United States within the context of American social, cultural, economic, and intellectual history.
01.610 Theories of Learning (3-0-3) This course offers a detailed analysis of the major contemporary learning theories, both behavioral and cognitive.
01.611 Cognition and Instruction (3-0-3) This seminar relates the fields of cognitive psychology and instructional psychology. The focus is on improving classroom practice by application of cognitive processes.
01.615 Issues in the Philosophy of Education (3-0-3) Topics of contemporary concern will be examined with a view to their philosophical basis. Where applicable, views of the great philosophers will be examined relative to these topics.
01.616 Issues in Sociology of Education (3-0-3) This course conducts an analysis of the topics and conflicts associated with a national commitment to both academic excellence and educational equity.
01.617 Contemporary Issues in Education (3-0-3) This course is concerned with philosophical disputes which have a direct relationship to the problems of education.
01.625 Organization of Schools and School Systems (3-0-3) This course is designed to help students understand the organizational dynamics of schools. The knowledge gained should assist students in identifying and suggesting alternatives to programmatic and behavioral regularities found in a school or human service organization.
01.636 Sociology of Educational Communities (3-0-3) Examines the social, cultural, and political forces that shape the school environment and provide context for teaching and learning. Additionally, the types of existing and desired relationships among schools, families, and communities will be discussed.
01.641 Work, Technology, and Schooling (3-0-3) An examination of the ways in which various ideas of work discipline the goals of
school, the methods of instruction and administrative structure.

01.645/646 Perspectives and Visions of Schooling: I/II (3-0)/3 (3-0)3 Open to matriculated doctoral candidates only. Provides students a common reference for considering and understanding significant issues in education. Major concerns in schooling will be examined with a view to historical, sociological, and economic antecedents and implications for the future of education.

01.701 Human Memory and Cognition (3-0)3 This course will cover the fundamentals of human memory and cognition. In addition to modern memory theory, the basic cognitive processes of perception, comprehension, believing, dreaming, imagination, and thinking will be explored.

01.702 Cognitive Psychology: Information Processing Theories of Human Performance (3-0)3 This course will take an in-depth examination of information processing theories of learning and human performance. The functions of schemata and information and memory structures will be analyzed with respect to thinking, imagination, and problem solving.

02.500 Contemporary American Culture (3-0)3 Different aspects of American culture will be explored, from its origin to the twentieth century.

02.501 First and Second Language Acquisition (3-0)3 A study of the general schools of thought that have formed the basis of teaching English as a Second Language. This course is designed to assist students in conceptualizing the foundations of first and second language acquisition.

02.502 Sociocultural Perspectives of Teaching English as a Second Language (3-0)3 Theories of learning in bilingual education and ESL will be presented. The rationale underlying bilingual and ESL education will be discussed. Policies and practices at state and federal levels will be examined.

02.503 Methods of Second Language Instruction (ESL) (3-0)3 Different approaches and teaching procedures in Second Language Instruction will be discussed as well as the methodological models of English as a Second Language instruction.

02.504 Curriculum Materials and Adaptation (ESL) (3-0)3 Curriculum designs and instructional materials used in English as a Second Language will be examined.

02.505 Language Arts Instruction for ESL teachers (3-0)3 Current approaches, methods and techniques for teaching Language Arts and their application to English as a Second Language classrooms.

02.508 Approaches to Second Language Testing Assessment (3-0)3 Procedures to test and assess ESL-Bilingual students.

02.509 The Bilingual Child with Special Needs (3-0)3 Development of awareness, knowledge and skills for teaching culturally and/or linguistically different students who have moderate special needs.

02.512 Linguistics for ESL Teachers (3-0)3 Discusses the contribution of general linguistics theory and research to bilingualism and second language acquisition.

02.514 Education of Linguistically and Culturally Diverse Students (3-0)3 Provides awareness and knowledge to educators of English Language Learners (ELL) on issues involving linguistic and cultural diversity.

02.515 ESL Practicum and Seminar (6-0)6 For ESL Certification. On-site field experience in an ESL classroom, under the supervision of a qualified ESL teachers and faculty of the College of Education.

02.517 Community Organization and Parental Participation (3-0)3 The aim is to prepare school personnel to work effectively with community groups and bilingual parent organizations.

02.525 Bilingual Field Work/Internship (3-0)3 For NON-certification On site field experience in bilingual classroom, under a qualified bilingual teacher and university supervisor.

02.551 Mathematics Education (3-0)3 New approaches in the curriculum and teaching of mathematics in the elementary school; analysis and use of current materials, national and state standards, multimedia approaches, and inductive and problem-solving techniques.

02.553 Language Arts and Literacy Education (3-0)3 Approaches in the teaching and assessment of the language arts in the elementary school will be analyzed. Assorted genres of literature and the development of literature programs for children in multi-cultural environments will be studied.

02.554 Analysis of Teaching (3-0)3 Examines the Principles of Effective Teaching and considers how theses principles can be incorporated into successful classroom practice. Focus on Issues of curriculum planning and instruction, teaching and learning strategies, classroom management, equity, state and federal mandates, reflective practice, and professionalism.

02.556 Reading and Reading Disabilities (3-0)3 A critical analysis of fundamental issues and principles in the teaching of reading, including all phases of the elementary reading program. Analysis and remediation of reading disabilities which explores the use of critical diagnostic tools.

02.560 Curriculum Development: Middle/Secondary (3-0)3 Analysis, comparison, and evaluation of a variety of models for curriculum development; evaluation of present curricula in middle and secondary schools, and development of strategies for implementing curriculum reform.

02.562 Social Studies Education (3-0)3 Examines teaching strategies and materials appropriate for the teaching of K-8 social studies. Examines national and state standards for the discipline.

02.563 Science Education (3-0)3 Models the teaching of science as guided discovery while exploring developmentally appropriate concepts in science. Examines national and state standards as well as nationally developed curriculum kit-based materials.

02.901 Human Rights, Conflict Resolution, and Peace Education (9-0)9 Prerequisites: All courses required for middle school certification. Grade point average must be 3.25 or better. Full time practicum in the public elementary, middle or secondary schools under the supervision of qualified teachers, principals, and faculty of the College of Education. Weekly seminar and portfolio development addressing the standards for professional teacher certification.

02.910 Interdisciplinary Curriculum Development. (3-0)3 An in-depth analysis of the rationale for developing interdisciplinary and integrated curricula in secondary schools. Students will explore curriculum materials in use and develop an interdisciplinary curriculum of their own.

02.979 Teaching Middle School (3-0)3 Prerequisites: All courses required for middle school certification. Grade point average must be 3.25 or better. Any previous practica must have been successfully completed. Full time practicum in a middle school under the supervision of qualified teachers, principal, and faculty of the College of Education.

02.988 Teaching Early Childhood (6-0)6 Prerequisites: All courses required for early childhood certification. Grade point average must be 3.25 or better. Any previous practica must have been successfully completed. Full time practicum in an early childhood setting under the supervision of qualified teachers, principal, and faculty of the College of Education.

03.612 Computer Applications in the Classroom (3-0)3 A general survey of classroom computer application: turnkey software applications, tool software, software selection, computer-video applications and telecommunications. Students will develop a computer-based lesson.

03.620 Models of Integration of Technology in the Curriculum (3-0)3 Students will explore uses of instructional television, videodisc, computers and two-way
This course will foster the development and sharing of curricula and instructional strategies that are responsive to the needs of middle school students.

04.585 Early Childhood Education (3-0)3
Recent research and program planning requirements associated with implementing an early childhood program in schools and/or the community.

04.605 Inquiry in Science Teaching (3-0)3
An exploration of teaching science as open inquiry and guided discovery. Students will learn basic science content and methodology appropriate for K-8 students, as well as exploring nationally recognized curriculum materials.

04.606 Science Education in Urban Schools (3-0)3
Designed for curriculum leaders and science specialists. An examination and evaluation of science programs and materials appropriate for urban settings.

04.614 Constructivist Perspectives in Mathematics and Science Education (3-0)3
Traces the emergence and evolution of personal, social, and radical constructivism and their influence on mathematics and science education. In particular, the works of Piaget, Vygotsky, and von Glasersfeld are examined.

04.617 Advances in Mathematics, Science and Technology Education. (3-0)3
This course examines current trends and issues in the field of science and mathematics education.

04.622 Mathematics, Science, and the Educated Mind (3-0)3
Examination of the interaction of science and mathematics in the growth of knowledge, and current considerations of literacy.

04.624 Assessment in Science and Mathematics Education (3-0)3
Actual assessment and evaluation of students and/or programs, and their effect on teaching and curricula decisions will be emphasized.

04.626 Development of Concepts in Science (3-0)3
Review of the historical development of selected science concepts and the emergence of the philosophy of science. Progress in science is examined together with views of the nature of science.

04.627 Development of Concepts in Mathematics (3-0)3
Participants will analyze the nature of mathematics content knowledge and the nature of mathematics process knowledge, as well as the nature and process of knowledge acquisition. A conceptual framework will emerge from the synthesis of existing information.

04.628 Reasoning and Problem Solving in Science (3-0)3
An analysis of the development of procedural knowledge, with particular emphasis on reasoning and problem solving, as they are currently conceptualized in educational and psychological literature.

04.629 Reasoning and Problem Solving in Mathematics Education (3-0)3
Participants will analyze current literature relating to reasoning, problem solving and critical thinking. Synthesis of this literature will serve as a foundation for examining curriculum decisions.

04.634 Constructivism: A Referent for Research on Learning (3-0)3
Beginning with an examination of the work of Piaget and Vygotsky, this course will help teachers and curriculum leaders to understand the personal and social dimensions of learning in K-16 settings. Course participants are required to conduct an action research project to examine student knowledge constructions.

04.636 Theory and Research in Curriculum (3-0)3
A study of the nature of the educational experience and the creation of curricula. The contemporary theorists’ views of content, concept, experience and curriculum development.

04.638 Curriculum Design: K-12 (3-0)3
A review of state mandates which, by law, shape the curriculum of the school. Examination of “new” curricula and their sources, as well as the development of a rationale for curriculum design and an evaluation of the personnel and techniques by which these curricula can be developed.

04.642 Politics of Curriculum Change: Control of Educational Programs (3-0)3
Analysis of various pressure groups that attempt to exert influence on the school curriculum. Students will investigate the ideologies, mechanisms, and impacts of various political forces at the local, regional and national levels.

04.643 The Skillful Teacher (3-0)3
This course is designed to help teachers and educational leaders view teaching from a reflective stance. Teaching skills rarely identified from research on teaching; and video tapes of teaching are studied for examining the application of these skills in actual teaching practices.

04.644 Models of Teaching (3-0)3
Examination and mastery of alternative models of teaching; identification and evaluation of teaching tactics and strategies.

04.648 Teaching for Standard Certification (3-0)3
Supervised 400 hour clinical experience and seminar for teachers who hold Provisional with Advanced Standing. Permission of faculty.

04.649 Practicum Internship: Supervisor/Director (3-0)3
Supervised clinical experience in a school under the direction of both the school administrator and a college faculty member. This course is for students seeking state certification.

04.650 Practicum: Curriculum and Instruction (3-0)3
Prerequisite: Permission of Chairperson of the Faculty. Supervised clinical experience. An opportunity to apply the skills and knowledge of curriculum development and evaluation of instruction. Not for state certification.

04.655 Directed Study in Curriculum and Instruction (3-0)3
Prerequisite:
04.660 Secondary Schools in America (3-0-3) Examination of the history, current status, and future directions of schools in American society.

04.670 Issues in Curriculum and Instruction (3-0-3) Discussion of the origins of current problems in curriculum; the analysis of the viewpoints of leaders in curriculum reform; and the impact of new technologies on the direction of curriculum change are included.

04.671 Research Seminar I in Curriculum and Instruction (3-0-3) This course considers recent research in the relevant field and focuses on implications of the research for classroom and school practice. By this means it is expected that each student will identify an area of work for further study and original research for the qualifying paper.

04.672 Research Seminar II in Curriculum and Instruction (3-0-3) Continues work from preceding semester in 04.671, culminating in a research paper.

04.729 Directed Study in Mathematics and Science Education (3-0-3) Participants will develop a focused line of investigation with the supervision of a faculty member in the college. Approval of advisor is required.

04.730 Advanced Research Seminar I: Mathematics and Science Education I (3-0-3) May only be counted toward the 9 credits of dissertation research. Consideration of topics and problems associated with literature reviews of participants in mathematics or science education. Prerequisite: Successful completion of qualifying examination.

04.731 Advanced Research Seminar II: Mathematics and Science Education (3-0-3) May only be counted toward the 9 credits of dissertation research. Continued consideration of topics and problems associated with research proposals of participants in mathematics and science education. Prerequisite: 04.730.

05.620 Introduction to Educational and Human Service Administration (3-0-3) Explores how to be and what it means to be an administrator. "Grasps" of self in role and perception are related to ethical commitment.

05.622 Financial Aspects of Educational and Human Service Administration (3-0-3) Examines how moral and financial resources are marshaled and managed to meet needs of schools and human service agencies. Includes legal, economic and organizational analysis, program definition, budgeting, management and evaluation.

05.623 School Law (3-0-3) Understanding and research of legal issues, and resolutions, pertinent to educational administrators. Ethical and creative practice of "preventive law."

05.626 Educational Response to Cultural Diversity (3-0-3) The role of schools in a culturally pluralistic, industrial society. The response of educational institutions to diverse ethnic groups in earlier times. Recent legislation on public education will be examined.

05.627 Citizenship Participation in Education and Community Action Programs (3-0-3) Understanding and improving the relationships between parents and schools can be an important factor in improving the quality of education. A study of pertinent theoretical and research literature as well as specific applied situations, such as effective approaches for involving "hard to reach" parents.

05.629 Politics of Education and Human Services (3-0-3) This course contrasts the tradition of keeping politics separate from education with the realities of the educational system, and it examines the political interplay at federal, state and local levels which shapes human services programs.

05.639 Planning Process (3-0-3) Methods and theories of planning in educational and non-profit organizations. Setting goals and objectives, establishing priorities, undertaking a needs assessment for various kinds of short and long range planning.

05.640 Analysis of Educational and Human Service Organizations (3-0-3) An examination of various models of organizational analysis used to explain events and relationships in educational and human service institutions. Each student will develop a case study and analysis using organizational theory.

05.641 Issues in Staff Development (3-0-3) Includes techniques for assessing staff needs, design of alternative programs to improve staff performance, strategies to ensure productive in-service education, and approaches to program evaluation.

05.642 Principles of Supervision (3-0-3) The interdisciplinary foundations of supervision: the function of theory, research on change, individual and group relationships in organizations, staff influence processes, talent utilization, and evaluation.

05.643 Principalship K-12 (3-0-3) The scope of the principal's role, including ethical dilemmas and practical realities, is examined by shadowing, case studies, simulation, literature review and written analyses. Participants identify and evaluate the effects of alternative styles of principals.

05.644 Practicum: Educational Administration (3-0-3) Prerequisites: 05.620, 05.640, 05.639 and Permission of Coordinator. Supervised clinical experience in an educational setting under the direct supervision of both an educational administrator and a college faculty member.

05.646 Practicum: Elementary School Principal (N-6) (3-0-3) Prerequisites: 05.620, 05.640, 05.643, 05.639 and Permission of Coordinator. Supervised clinical experience in an elementary school under the direction of both the school administrator and a college faculty member.

05.647 Practicum: Middle School Principal (5-9) (3-0-3) Prerequisites: 05.620, 05.640, 05.643, 05.639 and Permission of Coordinator. Supervised clinical experience in a middle school under the direction of both the school administrator and a college faculty member.

05.648 Practicum: School Principal (9-12) (3-0-3) Prerequisites: 05.620, 05.640, 05.643, 05.639 and Permission of Coordinator. Supervised clinical experience in a secondary school under the direction of both the school administrator and a college faculty member.

05.649 Directed Study in Administration, Planning and Policy (3-0-3) Prerequisite: Permission of Faculty Chairperson. Through frequent consultation with the instructor, the student will investigate and define a problem for research and will present the findings in a significant paper. The directed study may not be substituted for a required course.

05.650 Instructional Leadership and School Reform (3-0-3) Addresses the ways in which an instructional leader initiates changes in organizations—whether curricular or in the systems which make organizations function.

05.652 Managing Change and Conflict in Schools (3-0-3) Examines theories in the changing process, strategies for effective adoption and implementation of innovations and conflict resolution.

05.658 Role of Leadership in Contemporary Thought (3-0-3) This seminar reviews works on leadership by major contemporary writers including Burns, Kellerman, Maccoby, and Peters & Waterman.

05.670 Research Seminar I in Administration, Planning and Policy (CAGS only) (3-0-3) Considers recent research in the relevant field and focuses on implications of the research for classroom and school practice. By this means it is expected that each student will identify and area of work for further study and original research for the qualifying paper.

05.671 Research Seminar II in Administration, Planning and Policy (CAGS only) (3-0-3) Involves an in-depth search and review of the literature appropriate to the student’s future research.

05.729 Directed Study in Leadership in School (CAGS only) (3-0-3) Students will work on individually designed projects in leadership in school in close cooperation with a faculty member.
05.730 Advanced Research Seminar I: Leadership in Schooling (3-0)3
May only be counted toward the 9 credits of dissertation research. This seminar will consider recent research in the relevant field. The implications of the research for classroom and school practice will be its focus. Each student will identify an area of work for further study and original research for the dissertation.

05.731 Advanced Research Seminar II: Leadership in Schooling (3-0)3 May only be counted toward the 9 credits of dissertation research. The second seminar will involve an in-depth search and review of the literature appropriate to the student’s planned research.

06.522 Literature for Young Adults (3-0)3
The major emphasis of the course will be discussion and analysis of the goals of a literature curriculum and the exploration of various methods for achieving these goals.

06.528 Clinical Assessment of Reading and Language Disabilities (3-0)3
Prerequisites: 06.501, 06.502 (or their equivalents); A teaching certificate is required. Selection and use of procedures to make an adequate clinical and educational diagnosis. Includes the assessment of function and dysfunction in factors associated with language development; receptive, expressive, writing, reading; and the administration and interpretation of individual and group tests of perceptual, motor, and conceptual functioning in reading and language.

06.530 Reading and Thinking in the Secondary School (3-0)3
An exploration of research and theory in language-thought relationships with emphasis on the improvement of higher mental processes through instruction in listening and reading.

06.531 Organization and Supervision of Reading and Language Program (3-0)3
Organization and supervision of a reading-language program, evaluation of classroom instruction, selection of reading-language materials, coordination of the developmental program with remedial/corrective offerings, techniques of in-service education for various professional groups within a school system.

06.548 Practicum: Reading and Language Disabilities (6-0)6
Prerequisites: 06.528, and Permission of Reading and Language Coordinator. Supervised clinical experience in a school or clinical setting. (Note: Open to matriculated students only.)

06.549 Seminar in Reading and Language (3-0)3
Prerequisite: Permission of Instructor. A final course on the national and international research in reading and language and the pertinence and proposed implementation of research findings to instruction and the various roles of the reading supervisor or director. (Note: Open to matriculated students only.)

06.602 Developmental Reading Secondary
The continuum of reading skills from childhood to adulthood will be considered. Emphasis on secondary school reading.

06.603 Teaching Reading to Adults (3-0)3
This course examines recent research on adult learning and suggests a variety of effective instructional materials and strategies for teaching reading to adults in two-year colleges, in community settings, and in business and industry.

06.624 Teaching Reading Comprehension (3-0)3
Examination of the comprehension process in light of current research. Students devise teaching learning strategies which positively influence the reading comprehension of children and young adults.

06.625 Teaching of Writing (3-0)3
This course reviews the research and literature on writing instruction, grades K through 14, and examines points of view, approaches, methodologies, and materials in the area.

06.626 Teaching Study Skills, Grades 4-14 (3-0)3
An examination of research and successful teaching practices in skills and processes associated with the acquisition, assimilation, and expression of new information and ideas.

06.652 Assessment of Writing (3-0)3
This course introduces students to the vocabulary, ideas and issues necessary for understanding the nature and purpose of assessment of writing.

06.654 Evaluative Reading and Literacy (3-0)3
This course examines the theory of literacy and its direct application to instruction. The focus is on the higher level thinking skills of evaluation of written text.

06.656 Language Arts and Creativity (3-0)3
An exploration of the work on creativity, aspects of language arts and the relationships across these areas of study. Topics such as play, imagination, creative expression and problem-solving as well as attention to the dramatic arts and literature constitute the core of this course.

06.657 Responses to Literature (3-0)3
An in-depth study of theory and research on the work in readers’ responses to literature. Attention is given to past findings and methodologies as well as to future research in this area.

06.661 Organization and Supervision of Language Arts and Literacy Programs (3-0)3
Several aspects of supervision such as supervisory roles and functions, models for supervision, supervision and educational improvement, and supervision and faculty development will be examined. How content and organization influence instruction, supervision and evaluation will also be considered.

06.670 Issues in Reading and Language Instruction (3-0)3
Prerequisite: Permission of Instructor. Students will study such issues as the subskills vs. holistic theory of the reading process, spin-offs from the competency testing/basic skills trend, bilingualism as related to reading instruction, uses of electronic media in the schools, relationship of L.D. instruction to remedial reading.

06.671/672 Research Seminar in Reading and Language I, II (3-0)3 / (3-0)3
Prerequisite: Permission of Reading and Language Coordinator. For CAGS students. Papers in areas related to problems in reading and language. An examination and analysis of current research at the national and international levels will be conducted, and methods of implementation and dissemination of pertinent results will be discussed.

06.673/674 Curriculum Design for English/Language Arts I, II (3-0)3 / (3-0)3
This course will examine past and contemporary designs for the language arts and literature curriculum, consider the issues associated with each, and develop an English language arts and literature program for schools of the future.

06.729 Directed Study in Language Arts and Literacy (Ed.D.) (3-0)3
Students will work on individually designed projects in language arts and literacy in close cooperation with a faculty member.

06.730 Advanced Research Seminar I: Language Arts and Literacy (3-0)3
May only be counted toward the 9 credits of dissertation research. This seminar will consider recent research in the relevant field. The implications of the research for classroom and school practice will be its focus. Each student will be able to identify an area of work for further study and original research for the dissertation.

06.731 Advanced Research Seminar II: Language Arts and Literacy (3-0)3
May only be counted toward the 9 credits of dissertation research. The second seminar will involve an in-depth search and review of the literature appropriate to the student’s planned research.

07.540 Research Methods for Practitioners (3-0)3
The principles and procedures of classroom-based evaluation, including instrument design and data analysis, will be discussed.

07.640 Research Methods (3-0)3
(Prerequisite for Ed.D. students) The design of research studies and the application of data analysis techniques appropriate to the research designs will be considered. Evaluation of published research in accordance with established criteria will be required.

07.642 Program Evaluation (3-0)3
Evaluation tasks will be identified and the policy issues attendant to evaluation will be examined. Students will conduct an evaluation.

07.701 Seminar in Data Analysis (3-0)3
Prerequisite: A descriptive statistics or research methods course satisfactory to the Program Faculty. This course covers basic statistics used in the analysis of educational research.

07.702 Seminar in Research Methodology and Design (3-0)3
Prerequisite: 07.701 or acceptable substitute. Methods of data col-
lection suitable for answering a variety of educational research questions. Considers both qualitative and quantitative strategies for research and evaluation needs.

**07.703 Seminar in the Design of Research Projects** (3-0)3 Students will investigate methods of data collection and analysis as they relate to the research questions and plan for the student’s dissertation topic.

**07.704 Qualitative Research Methods** (3-0)3 This course concentrates on the use of qualitative methods for educational research. Strategies for conducting qualitative studies are described and techniques for analyzing and reporting findings are emphasized.

**07.705 Survey Research Techniques and Strategies** (3-0)3 Focusing on survey research methods, this course will familiarize students with the strategies, techniques, tactics, and issues in developing and administering questionnaires and interviews.

**07.707 Writing for Professional Publication** (3-0)3 This course will assist students: 1) to identify professional journals appropriate for publications in their fields, 2) to analyze the type of articles used, and 3) to prepare research clearly and concisely for publication.

**08.659 Strategies for Instruction in Higher Education** (3-0)3 A variety of theories, methods and multi-media techniques of teaching will be explored in order to familiarize students with the many options available to facilitate learning by adults.

**08.660 Minorities in Higher Education** (3-0)3 Focuses on the preparation, admission, retention, and achievements of minorities in higher education, both past and present.

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**JAMES B. FRANCIS COLLEGE OF ENGINEERING**

*Dean*

**Krishna Vedula**

B. Tech., Indian Institute of Technology; M.S., Drexel University; Ph.D., Michigan Technological University.

*The education of engineers in state-of-the-art areas of advanced technology and the University’s commitment to national and regional economic development are the major premises upon which the graduate programs in the College of Engineering are based. These programs are intended to produce engineers whose education not only develops expertise in the design, development and production of products, but also an understanding of the management involved in the creation of new products, companies and service organizations. Thus, the graduate programs in engineering are intended to educate engineers capable of keeping abreast with the rapidly changing technology that characterizes the high technology economy of the Northeast. The programs lead to degrees of Master of Science in Engineering, Master of Science, Doctor of Science, Doctor of Philosophy, and Doctor of Engineering.*

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**MASTER OF SCIENCE IN ENGINEERING (M.S. ENG.)**

This degree is awarded in the following fields:

- Chemical Engineering
- Civil Engineering
  - Options - Environmental, Geotechnical, GeoEnvironmental, Structural, Transportation
- Computer Engineering
- Electrical Engineering
  - Option - Opto-electronics
- Energy Engineering
  - Options - Nuclear, Solar
- Mechanical Engineering
- Plastics Engineering
  - Options - Coatings & Adhesives, Fiber/Composites

**MASTER OF SCIENCE (M.S.)**

The M.S. is awarded in the following fields:

- Environmental Studies
- Work Environment
  - Options - Industrial Hygiene, Occupational Ergonomics, Epidemiology, Work Environment Policy

**DOCTOR OF PHILOSOPHY (PH.D.)**

The Doctor of Philosophy in Physics is awarded through the College of Arts and Sciences in the following fields:

- Applied Mechanics
- Energy Engineering
- Radiological Sciences

The Doctor of Philosophy in Chemistry is awarded through the College of Arts and Sciences in the following fields:

- Biochemistry
- Environmental Studies
- Polymer Science/Plastics Eng. Option

**DOCTOR OF SCIENCE (SC.D.)**

The Doctor of Science degree is awarded in the following field:

- Work Environment
  - Options - Occupational Ergonomics, Industrial Hygiene, Epidemiology, Work Environment Policy

**DOCTOR OF ENGINEERING (D. ENG.)**

Doctor of Engineering degrees are awarded in the following fields:

- Electrical Engineering
- Mechanical Engineering