

# MIDDLE-LEVEL SCIENCE/ MATH EDUCATION(4-8) CERTIFICATION

## Program Description

In our Middle Level (4-8) Education program, you'll delve into a comprehensive curriculum designed to equip you with the knowledge and skills necessary to effectively teach and support students in grades 4 through 8. You'll explore key concepts in child and adolescent development, curriculum design, instructional strategies, and assessment techniques tailored to the unique needs of this age group. Through hands-on experiences and practical applications, you'll learn to create engaging learning environments that foster academic success, social-emotional development, and positive relationships with students. Our program emphasizes collaboration, cultural responsiveness, and the promotion of equity and inclusion in education. Upon completion, you'll emerge as a confident and competent educator prepared to make a meaningful impact on the lives of middle-level students.

## Requirements for program completion

### 45 Credits

#### Core Courses

- EDC 503 Cognitive, Social, and Emotional Development
- EDC 510 Human Diversity
- EDC 604 Foundations of Schooling
- EDC 613 The Role of the Developmentally Oriented Teacher
- EDC 751 Transformative Pedagogy: A Capstone Experience

#### Certification Courses

- EDC 512 Introduction to the Middle School
- BLS 601 Techniques of Teaching English to Speakers of Other Languages
- EDC 617 Reading in the Content Areas
- EDC 641 Teaching Science as Integrated Inquiry
- EDC 642 Development of Mathematical Thought
- EDC 643 Developing and Adjusting Instruction
- EDC 645 Planning and Instruction for Students with Special Needs
- EDC 661 Teaching All Students in Inclusive and Special Education Settings

#### Professional Semester

- EDC 662 Elementary and Special Education Student Teaching (candidates with no teaching experience)

OR

- EDC 669 Elementary and Special Education Supervised Teaching/ Transitional Teaching Early Elementary and Special Education Supervised Teaching (candidates with two or more years of teaching experience and currently employed as teachers or teaching assistants and with approval of the Candidacy Committee)
- EDC 679 Special Methods of Teaching (seminar that accompanies student teaching)

| Course                 | Title                                                                                                                                | Credits   |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>First Year</b>      |                                                                                                                                      |           |
| <b>First Semester</b>  |                                                                                                                                      |           |
| EDC 503                | Cognitive, Social, and Emotional Development                                                                                         | 3         |
| EDC 510                | Human Exceptionalities                                                                                                               | 3         |
| <b>Credits</b>         |                                                                                                                                      | <b>6</b>  |
| <b>Second Semester</b> |                                                                                                                                      |           |
| EDC 512                | Introduction to the Middle School                                                                                                    | 3         |
| EDC 617                | Reading in the Content Areas for Secondary Educators                                                                                 | 3         |
| <b>Credits</b>         |                                                                                                                                      | <b>6</b>  |
| <b>Third Semester</b>  |                                                                                                                                      |           |
| EDC 643                | Developing and Adjusting Instruction                                                                                                 | 3         |
| EDC 645                | Planning and Instruction for Students with Special Needs                                                                             | 3         |
| EDC 661                | Teaching All Students in Inclusive and Special Education Settings                                                                    | 3         |
| <b>Credits</b>         |                                                                                                                                      | <b>9</b>  |
| <b>Second Year</b>     |                                                                                                                                      |           |
| <b>First Semester</b>  |                                                                                                                                      |           |
| EDC 641                | Teaching Science as Integrated Inquiry                                                                                               | 3         |
| EDC 642                | Development of Mathematical Thought                                                                                                  | 3         |
| BLS 601                | Techniques of Teaching English to Speakers of Other Languages                                                                        | 3         |
| <b>Credits</b>         |                                                                                                                                      | <b>9</b>  |
| <b>Second Semester</b> |                                                                                                                                      |           |
| EDC 613<br>or EDC 669  | The Role of the Developmentally Oriented Teacher<br>or Elementary and Special Education Supervised<br>Teaching/Transitional Teaching | 3         |
| EDC 662                | Elementary and Special Education Student Teaching                                                                                    | 3         |
| EDC 679                | Elementary and Special Education Special Methods of Teaching                                                                         | 3         |
| <b>Credits</b>         |                                                                                                                                      | <b>9</b>  |
| <b>Total Credits</b>   |                                                                                                                                      | <b>39</b> |

## Course Sequence

### Eight-Week Sessions

#### EDC 503 Cognitive, Social, and Emotional Development

This course provides an overview of the physical, cognitive, psychosocial, emotional, and moral development for humans across the lifespan. Participants will explore theories of learning and development as they pertain to the individual in the home, in schools, the community, at work, individually, with families and with peers. Attention will be paid to both normative and nonnormative developmental trends.

#### EDC 510 Human Exceptionalities

This course introduces human exceptionalities and surveys the psychological, medical, legal, and social forces influencing the provision of services for exceptional people. Clarifies perceptions of exceptionalities, defines and describes key terms and concepts, and identifies major trends that affect the scope and nature of service to exceptional people.

#### EDC 613 The Role of the Developmentally Oriented Teacher

This course enables students to more expertly apply child and adolescent developmental concepts to the practice of teaching. Explores strategic instructional planning, teaching styles, presentation skills, cooperative learning, and classroom management systems. Emphasizes the role of the teacher as an educational leader and decision-maker. Uses video-assisted micro-teaches both in the laboratory and the classroom.

Prerequisite(s): EDC 503

**EDC 512 Introduction to the Middle School**

This course is designed to provide students with an overview of the historical, social, and cultural influences in the development of the middle school concept. It investigates organizational structure, alternative patterns of school and class organization, team planning, and collaboration techniques. This course focuses exclusively on middle-level philosophy, transition, learning, and management so that teacher candidates seeking certification in grades 4-8 will have a deeper understanding of adolescent issues requiring specific educational approaches.

**BLS 601 Techniques of Teaching English to Speakers of Other Languages**

The course analyzes various methodologies used in teaching English as a second language. Emphasis is placed upon methods in teaching, listening, and speaking. Microteaching of difficult points of pronunciation and grammar is also emphasized. Significant attention is given to effective techniques in second-language acquisition.

**EDC 617 Reading in the Content Areas for Secondary Educators**

This course provides students with the opportunity to understand reading as a strategic interactive process that affects the learner's efforts in all academic areas. Students will explore currently held views of the reading process, instruction techniques, and assessment concerns related to secondary education. Class sessions employ a variety of formats, including lecture, demonstration, discussion, and hands-on experiences. Course projects provide practical application of the theoretical, instructional, and diagnostic issues presented. Required of all certification candidates. Prerequisite(s): EDC 503

**EDC 641 Teaching Science as Integrated Inquiry**

This course focuses on how to develop student understanding of scientific knowledge and nature of scientific inquiry through inquiry-centered approaches that are in harmony with the contemporary research on cognitive science, motivation, and learning and instruction. It also addresses science education standards, issues, research, and application. Throughout the semester, students are provided with many opportunities to engage in personal and collaborative inquiry about teaching and learning science. Prerequisite(s): EDC 503

**EDC 642 Development of Mathematical Thought**

Assists students in understanding how children develop quantitative reasoning and examines implications for teaching math concepts, skills, and problem-solving approaches across content areas. Provides a basis for understanding the changing mathematics curriculum and offers opportunities to plan and evaluate instructional techniques. Required of all Elementary and Special Education Certification candidates. Prerequisite(s): EDC 503

**EDC 643 Developing and Adjusting Instruction**

This course is designed to help elementary and special education teachers use a developmental perspective in order to design instruction that maximizes learning for a diverse groups of pupils. Further, this course will provide the knowledge necessary for teachers to adjust instruction to accommodate the wide variety of needs commonly found among children with and without disabilities and other needs in current elementary and special education classrooms. Education 643 provides the background necessary for understanding developmental levels, learning styles, and research-based instructional strategies that connect to unit development. Education 645 and 661 represents a summer practicum experience necessary to implement instruction in inclusive and non-inclusive educational settings. Prerequisite(s): EDC 503, EDC 510

**EDC 645 Planning and Instruction for Students with Special Needs**

This course will extend graduate students' understanding of Individualized Education Plan (IEP) planning, including the Individual Transition Plan, and how to collaborate with parents and outside agencies. Included will be IEP interpretation and accommodations for students classified as low incidence students, including autism. In addition, students will learn how to adjust standards-based units of instruction to meet the needs of students with moderate to severe disabilities. Addressed will be the following: functional and basic academics, communication, daily living skills, socialization, community experiences and related services. Prerequisite(s): EDC 643

**EDC 661 Teaching All Students in Inclusive and Special Education Settings**

An extension of EDC 645 in which participants design and deliver instruction to moderately and severely handicapped learners. Emphasizes the classroom application of research-based knowledge of child development and individual differences. Prerequisite(s): EDC 643 and EDC 645 or EDC 647

**EDC 662 Elementary and Special Education Student Teaching**

Required of all Elementary and Special Education Certification candidates with no teaching experience. Prerequisite(s): Must be taken as final course in certification sequence.

**EDC 669 Elementary and Special Education Supervised Teaching/ Transitional Teaching**

This course can, with permission of the Candidacy Committee, replace student teaching for candidates with one or more years teaching experience who are also currently employed as teachers. For one semester, the supervised teacher is observed and guided by University faculty while teaching in his/her own current private or public school position. The supervised teacher also conducts an action research project. Required of all certification candidates who are not required to take student teaching. Prerequisite(s): Must be taken as final course in certification sequence.

**EDC 679 Elementary and Special Education Special Methods of Teaching**

Weekly seminars held either on campus or at the practicum site designed to help students translate theory into practice by exploring teaching methods in the chosen area of certification. Research project required. Required of all certification candidates. Prerequisite(s): Must be taken as final course in certification sequence.

## Course Descriptions

### Education