

**ECN 3223 Current Economic Topics Seminar** **Three hours**  
Examination of selected topics of current interest in economics. May be repeated for credit as topics change. Prerequisite: ECN 2123 (or 2002)  
Offered spring semester (even-numbered years)

**ECN 4103 International Trade** **Three hours**  
Highlights the interdependence of nations in a global economy. Includes trade theory, the costs and benefits of trade restrictions, the determination of exchange rates, international monetary systems, the effects of domestic economic policies on a nation's trade balance and trade relations with other nations, and the causes and effects of current international trade problems. Prerequisite: ECN 2123 (or 2002)  
Offered fall semester

**ECN 4131, 4132, 4133 Selected Topics** **One to three hours**  
A course offering students opportunities to study subjects of special interest. May be offered on a group basis in a classroom setting or as independent study under faculty supervision. Prerequisite: junior standing and consent of instructor  
Offered upon sufficient request and instructor

**ECN 4993 Senior Research Project** **Three hours**  
Individual, intensive study and presentation an approved topic. This project is integrative in nature and is to be completed during the student's final year of study. Prerequisites: senior standing and consent of instructor  
Offered spring semester

## **ED (Teacher Education)**

**ED 1113 Introduction to Education** **Three hours**  
Orientation to the field of education, with emphasis upon American public education, its history, organization, curricula, functions, and relationship to a multicultural society. The importance of professional development is stressed and an on-going professional portfolio is begun. Field experiences and reports are included.  
Offered each semester

**ED 2113 Human Growth and Development** **Three hours**  
A foundational course dealing with physical, mental, emotional, social, and cultural aspects of individual development from prenatal through adolescence. Emphasis is placed on the Piagetian Stages and sociocultural theory. Field assignments require the observation of children from early childhood through adolescence with an emphasis on cultural diversity. Prerequisite: PSY 1013  
Offered spring semester

**ED 2123 Educational Communications and Technology** **Three hours**  
A basic course in design, production and utilization of various types of educational media and graphics for P-12 classroom use; instruction in the availability and use of ready-made materials and audiovisual equipment; competency in classroom-related computer applications, and evaluation techniques for emerging technologies. Prerequisite or corequisite: ED 1113  
Offered each semester

**ED 2133 Educational Psychology** **Three hours**  
Psychology applied to teaching and learning, covering such topics as motivation, retention, reinforcement, transfer, maturation, socialization, and individual differences relative to cultural and environmental influences. PDS field experience is required. Prerequisites: ED 1113 and 2113, PSY 1013, and admission to field experience (Gate One)  
Offered each semester

**ED 2713 Education of the Exceptional Student** **Three hours**  
Orientation to the types of exceptionalities in students including those who are gifted, mentally retarded, physically handicapped, emotionally disturbed, disadvantaged, learning disabled, and others. This course includes an overview of the legal responsibilities and special educational support systems necessary to provide services for these various populations. Designed to assist candidates in enhancing the learning of all students. Field and/or lab experiences are required. Prerequisite: ED 2113 and admission to field experience (Gate One). Prerequisite or corequisite: ED 2133 or consent of instructor  
Offered spring semester

**ED 3121 Educational Communications** **One hour**  
Communication skills for teachers, including verbal and non-verbal skills required for the classroom. Emphasis is placed upon communicating effectively with students, colleagues, parents, and other members of the public or professional community. Cultural and linguistic diversity factors are addressed. Prerequisite: Admission to Teacher Education (Gate Two)  
Offered each semester

**ED 3153 Reading in the Content Areas** **Three hours**  
Seventh through twelfth grade licensure candidates study assessment and instructional strategies designed to facilitate effective teaching of their content as well as the comprehension and effective use of content materials for all students, including ESL students and those with special needs. Methods are provided whereby candidates might evaluate the appropriateness of content materials and the learning needs of their students. Candidates must collaborate with a peer in developing a detailed, integrated unit that focuses on content instruction and includes learning objectives, appropriate use of teaching strategies, handouts, technology, transparencies, and assessment. Lab and field experiences are required. Prerequisites: Admission to Teacher Education (Gate Two), ED 2113 and 2133. Prerequisite or corequisite: ED 2713  
Offered spring semester

**ED 3263 Foundations of Early Childhood Education and Preschool Field Experience** **Three hours**  
The study of the philosophical and historical foundations of early childhood education. This course also includes the study of the physical, cognitive, social, spiritual, and emotional needs of young children. Eighteen hours of pre-school field experience (including Head Start) are required. Prerequisite: ED 2113 and admission to field experience (Gate One)  
Offered fall semester

**ED 3273 Curriculum and Instruction: Early Childhood Education**

**Three hours**

A course designed to provide for the study of the curriculum, teaching methods, materials, equipment, and classroom management procedures which can be used to enhance the learning experiences of preschool and kindergarten age children. Course focuses on integrated learning and includes eighteen hours of field experiences in a kindergarten classroom and at a school for special needs students. Prerequisites: Admission to Teacher Education (Gate Two); ED 2133 and 3263. Prerequisite or corequisite: ED 3353

Offered spring semester

**ED 3353 Instructional Methods, 1-8**

**Three hours**

Emphasizes the application of effective teaching skills. Includes experiences with several teaching models appropriate for students of diverse backgrounds and special needs. Social studies methods and materials are incorporated throughout the course. Field and lab experiences are required. Prerequisites: ED 2113, admission to field experience (Gate One). Prerequisites or corequisites: ED 2123 and 2133

Offered each semester

**ED 3362 Curriculum and Instruction: Language Arts, 4-8**

**Two hours**

Materials and methods of teaching language arts in the middle school. The four components of a language arts curriculum are addressed, as well as methods and materials to be used in facilitating learning in the areas of these four major components. Emphasis is placed upon the use of these tools in all areas of the curriculum including the areas of math, science and social studies. Field and/or lab experiences are required. Course is restricted to students admitted to the 4-8 middle school licensure program. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, and 2133. Prerequisite or corequisite: ED 3353. Corequisites: ED 3371 and 3393

Offered fall semester

**ED 3363 Curriculum and Instruction: Language Arts, P-4**

**Three hours**

Materials and methods of teaching language arts in the primary grades. The four components of a language arts curriculum are addressed as well as methods and materials to be used in facilitating learning in the areas of these four components. Emphasis is placed upon language development and its importance to learning and to the components of the language arts program, as well as how these components support learning in all other areas of the school curriculum. A language case-study is required. Course is restricted to the P-4 licensure program. Field and/or lab experiences are required. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, and 2133. Prerequisite or corequisite: ED 3353. Corequisites: ED 3373 and 3393

Offered fall semester

**ED 3371 Curriculum and Instruction: Reading I, 4-8**

**One hour**

Middle school candidates become familiar with various models of reading instruction and the theories that support those models of the reading process. This course provides an overview of instruction and assessment and is designed to encompass both theoretical and practical aspects of learning how to teach reading in grades 4-8. Course is restricted to licensure candidates admitted to the 4-8 middle school licensure program. Field and/or lab experiences are required. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, and 2133. Prerequisite or corequisite: ED 3353. Corequisites: ED 3362 and 3393

Offered fall semester

**ED 3373 Curriculum and Instruction: Reading I, P-4** **Three hours**  
 Preschool through fourth grade candidates become familiar with various models of reading instruction and the theories that support those models of the reading process. This course provides a balanced overview of instruction and assessment, designed to encompass both the theoretical and practical aspects of learning how to teach reading in grades P-4. Included are studies of the stages of reading development, word identification strategies including phonics, fluency, comprehension strategies, assessment and technological strategies. Restricted to licensure candidates admitted to the P-4 program. Field and/or lab experiences are required. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123 and 2133. Prerequisite or corequisite: ED 3353. Corequisites: ED 3363 and 3393

Offered fall semester

**ED 3383 Curriculum and Instruction: Arithmetic, P-8** **Three hours**  
 Methods and materials for teaching arithmetic (based upon NCTM standards) with diverse students in grades P-8. Emphasis is placed on the use of mathematics manipulatives. For 4-8 Math/Sci emphasis there is an additional one-hour weekly lab for methods and materials particular to Grades 5-8 (based upon NCTM standards). Field and lab experiences are required. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, 2133, and 3353, MTH 2143 and 2183. Corequisites: ED 4373 and GSC 3103

Offered spring semester

**ED 3393 Children and Adolescent Literature** **Three hours**  
 A study of the literature that might be read and studied by elementary and/or middle school students. Includes a study of the foundations of literature for children and a study of a variety of literary selections from notable children's books (especially Newbery, Caldecott, and Coretta Scott King award winners). Also includes a study of multicultural literature. Corequisites: ED 3362/3363 and 3371/3373

Offered fall semester

**ED 3562 Second Language Acquisition for Teachers** **Two hours**  
 Major theories in second language acquisition are studied, with emphasis on contrastive principles of first and second language development. Special attention is given to second language acquisition implications in the K-12 classroom setting with diverse cultural and linguistic representation. Prerequisite: ED 2133; Corequisite: ED 3591

Offered fall semester

**ED 3583 Curriculum and Instruction: TESOL** **Three hours**  
 Methods and materials for teaching English to non-English speakers. Course addresses curriculum and strategies for teaching children through adults. The unique characteristics and needs of the K-12 program, adult community education, and intensive English settings are analyzed. Includes the skills to evaluate, select, access, and implement appropriate ESL materials and teaching strategies. Prerequisites: Admission to Teacher Education (Gate Two), ED 2133, 3353, 3562

Offered spring semester

**ED 3591 Field Experience: TESOL** **One hour**

A minimum of forty hours of field/lab experiences in a setting with English language learners. Through participation and analysis, candidates are introduced to the dynamics of the social, cultural, and economic challenges—plus second language development issues and the educational process. Prerequisites: Admission to Teacher Education (Gate Two), ED 3583, and EGL 3363. Corequisite: ED 3562

Offered fall semester

**ED 3723 Characteristics of Mildly, Moderately, and Severely Disabled** **Three hours**

A study of the mildly, moderately, and severely disabled student in school and society. A description of the biological, psychological, and sociological aspects of the disabled population. The culturally diverse and linguistically limited population is also covered. Specifically designed for special education endorsement candidates. Prerequisites: ED 2113, 2133, and 2713 or consent of instructor

Offered fall semester

**ED 3733 Curriculum and Instruction: Mildly, Moderately, and Severely Disabled** **Three hours**

Development of programs for the mildly, moderately, and severely disabled population. Teacher-made and commercially produced materials, technological applications and IEPs are covered as well as career options. Field and/or lab experiences are required. Specifically designed for candidates seeking special education endorsement. Prerequisites: Admission to Teacher Education (Gate Two), ED 2113, 2133, 2713, 3353, and 3723

Offered spring semester

**ED 3763 Behavior Management** **Three hours**

Focuses on various techniques for the changing/managing of behavior for early childhood and middle school students. Emphasis on analysis of behavioral needs and the design of appropriate classroom management strategies. Designed to meet the needs within the special education classroom as well as the regular classroom. Prerequisites: ED 2113 and 2133

Offered spring semester

**ED 3851 Field Experience: P-12** **One hour**

A minimum of forty hours of field/lab experiences in a music or physical education setting. Candidates are introduced to the dynamics of the educational process and the problems which affect it, through participation in and analysis of public school classrooms. Prerequisite: Admission to Teacher Education (Gate Two). Prerequisites or corequisites: ED 2113, 2123, and 2713

Offered each semester

**ED 3871 Field Experience: Special Education** **One hour**

A minimum of forty hours of field experience in a setting with students having special needs. Through participation and analysis, candidates are introduced to the dynamics of the educational process, social and economic problems, and learning styles which affect it. Prerequisites: Admission to Teacher Education (Gate Two). Prerequisites or corequisites: ED 2113, 2123, 2133, 2713, 3353, and 3723

Offered each semester

**ED 3903 Teaching in the Christian School** **Three hours**

An introductory course which includes history, philosophy, organization, and function of private Christian schools. The various curricular plans and methods are also considered. Meets ACSI certification requirements. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113 and 2133

Offered upon sufficient request

**ED 4183 Educational Assessment** **Three hours**

An investigation of the principles of assessment that are of primary importance to educators of both first and second language students. Includes relating objectives to assessment, constructing tests (e.g., language assessment, designing formative and summative assessments, content area achievement, diagnostic), interpreting and using test results (including modification strategies), and utilizing portfolios and other means of authentic assessment. Prerequisites: Admission to Teacher Education (Gate Two); ED 2133

Offered each semester

**ED 4373 Curriculum and Instruction: Reading II** **Three hours**

Procedures and methods to be used in analyzing and diagnosing reading difficulties, as well as appropriate strategies to be used to assist students with reading problems. Specifically addresses skills and strategies necessary for reading content materials. Candidates must submit an integrated unit plan that includes lesson plans, learning objectives, handouts, transparencies, the use of technology and assessment. Lab experiences in the areas of diagnosis of reading difficulties and the teaching of reading in all areas of the curriculum as well as participation in an integrated lab are required. Prerequisites: Admission to Teacher Education (Gate Two); ED 3371. Corequisites: ED 3383 and GSC 3103

Offered spring semester

**ED 4563 Curriculum and Instruction: Middle School** **Three hours**

Course includes a consideration of the philosophy and goals of the middle school movement, characteristics of the middle school student, classroom management, curriculum designs, and learning activities and strategies designed especially for the young adolescent. Course includes field and/or lab experiences. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2133, and 3353 or 3153

Offered fall semester

**ED 4664 Curriculum and Instruction: Secondary English** **Four hours**

Course includes consideration of the secondary school English curriculum; planning for instruction; teaching skills and strategies; evaluation and utilization of English instructional materials; and classroom management. Lab experiences and a field assignment for participation and seminar are included. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, 2133, 2713, and 3153

Offered fall semester

**ED 4674 Curriculum and Instruction: Secondary Mathematics** **Four hours**

Course includes consideration of the secondary school mathematics curriculum; planning for instruction; teaching skills and strategies; evaluation and utilization of mathematics instructional materials; and classroom management. Lab experiences and a field assignment for participation and seminar are included. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, 2133, 2713, and 3153

Offered fall semester

**ED 4684 Curriculum and Instruction: Secondary Science**      **Four hours**

Course includes consideration of the secondary school science curriculum; planning for instruction; teaching skills and strategies; evaluation and utilization of science instructional materials; and classroom and laboratory management. Lab experiences and a field assignment for participation and seminar are included. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, 2133, 2713, and 3153  
Offered fall semester

**ED 4694 Curriculum and Instruction: Secondary Social Studies**      **Four hours**

Course includes consideration of the secondary school Social Studies curriculum; planning for instruction; teaching skills and strategies; evaluation and utilization of Social Studies instructional materials; and classroom management. Lab experiences and a field assignment for participation and seminar are included. Prerequisites: Admission to Teacher Education (Gate Two); ED 2113, 2123, 2133, 2713, and 3153  
Offered fall semester

**ED 4763 Principles of Clinical Evaluation: Diagnosis and Remediation**      **Three hours**

Introduction to the principles of standardized testing and a survey of testing and evaluation procedures for students with disabilities. Includes procedures and methods to be used in the analysis and diagnosis of various learning and academic difficulties, with appropriate strategies for remediation. A case study with a written IEP is required as are field based and lab experiences. Prerequisite: Admission to Teacher Education (Gate Two); ED 3273, 3733, and 4373. Prerequisite or corequisite: ED 4183  
Offered fall semester

**ED 4772 Speech and Language: Special Populations**      **Two hours**

Introduction to the nature and causes of common speech and/or language disorders. Strategies for the evaluation and treatment of these disorders are provided. Designed for candidates seeking special education endorsement. Prerequisite: Admission to Teacher Education (Gate Two). Prerequisites or corequisites: ED 2713, 3363 (or approved ED 4901)  
Offered fall semester

**ED 4850 Internship: Early Childhood Education**      **Fourteen hours**

Interns are assigned to primary school(s) full-time to work under the joint supervision of an experienced classroom teacher and a university faculty member. Senior standing and Division of Teacher Education approval required. Division of Teacher Education approval of Gate Three requirements including an interview and review of the program portfolio. Prerequisites: Admission to Internship (Gate Three); ED 2713, 3121, 3263, 3273, 3353, 3363, 3373, 3383, 3393, 3723, 3763, 4183, 4373, GSC 3103, and any endorsement or second licensure prerequisites. Corequisite: ED 4851  
Offered each semester

**ED 4851 Seminar: Early Childhood Education**      **One hour**

Discussion of problems and concerns encountered during Internship. Designed to bring professional theory and practice into a working perspective. Includes basic concepts of classroom management, safety, legal and ethical issues affecting teaching, working with parents, portfolio assessment, and cultural diversity. Corequisite: ED 4850  
Offered each semester

**ED 4860 Internship: Middle School** **Fourteen hours**

Interns are assigned to a middle school and elementary school full-time to work under the joint supervision of an experienced classroom teacher and a university faculty member. Senior standing and Division of Teacher Education approval of Gate Three requirements including an interview and review of the program portfolio. Prerequisites: Admission to Internship (Gate Three); ED 2713, 3353, 3362, 3371, 3383, 3763, 4183, 4373, 4563, and any endorsement prerequisites. Corequisite: 4861

Offered each semester

**ED 4861 Seminar: Middle School** **One hour**

Discussion of problems and concerns encountered during Internship. Designed to bring professional theory and practice into a working perspective. Includes basic concepts of classroom management, safety, legal and ethical issues affecting teaching, working with parents, portfolio assessment, and cultural diversity. Corequisite: ED 4860

Offered each semester

**ED 4880 Internship: Secondary** **Fourteen hours**

Interns are assigned to a secondary school full-time, to work under the joint supervision of an experienced classroom teacher and a university faculty member. Senior standing and Division of Teacher Education approval of Gate Three requirements including an interview and review of the program portfolio. Prerequisites: Admission to Internship (Gate Three); ED 2713, 4183, C & I course for teaching field, and any endorsement prerequisites. Corequisite: ED 4881

Offered each semester

**ED 4881 Seminar: Secondary** **One hour**

Discussion of problems and concerns encountered during Internship. Designed to bring professional theory and practice into a working perspective. Includes basic concepts of classroom management, safety, legal and ethical issues affecting teaching, working with parents, portfolio assessment, and cultural diversity. Corequisite: ED 4880 or 4890

Offered each semester

**ED 4890 Internship: P-12** **Fourteen hours**

Interns are assigned to elementary and secondary schools full-time, to work under the joint supervision of experienced classroom teachers and a university faculty member. Senior standing and Division of Teacher Education approval of Gate Three requirements including an interview and review of the program portfolio. Prerequisites: Admission to Internship (Gate Three); ED 2713, 3851, 4183, C&I course for teaching field, and any endorsement prerequisites. Corequisite: ED 4891

Offered each semester

**ED 4891 Seminar: P-12** **One hour**

Discussion of problems and concerns encountered during Internship. Designed to bring professional theory and practice into a working perspective. Includes basic concepts of classroom management, safety, legal and ethical issues affective teaching, working with parents, portfolio assessment, and cultural diversity. Corequisite: ED 4890

Offered each semester

**ED 4901, 4902, 4903 Selected Topics** **One to three hours**

An intensive study of a selected area of the school curriculum designed to meet the particular needs of teacher candidates and in-service teachers or administrators. Specific subtitles may be added. Division of Teacher Education approval required.

Offered each semester

## **EE (Electrical Engineering)**

**EE 2113 Electrical Systems I** **Three hours**

An introduction to electrical circuits, circuit laws and electronics. A study of the basic components of analog and digital systems such as energy sources, resistors, capacitors, inductors, diodes, operational amplifiers, filters, gates and switches. Use of case studies and a design project in engineering electrical systems. Three hours lecture-discussion per week. Prerequisites: EN 1123, MTH 1134

Offered fall semester

**EE 2123 Electrical Systems II** **Three hours**

A study of network descriptions, network functions, operational amplifiers, frequency response and time response of R-C, R-L, R-L-C networks, network theorems, two-port theory, polyphase networks and magnetically coupled networks. Three hours lecture-discussion per week. Prerequisites: EE 2113 and MTH 2114

Offered spring semester

**EE 3211 Electronics Laboratory** **One hour**

Application of discrete and integrated components to linear and digital electronic circuits. Laboratory reporting procedures. Includes a design component. One three-hour laboratory each week. Prerequisite or corequisite: EE 3213

Offered fall semester

**EE 3213 Electronics I** **Three hours**

A study of diodes and transistors and the circuits that use them. Topics include biasing, low and high frequency effects, amplifier design, power supplies and operational amplifiers. Includes a design component. Three hours lecture-discussion per week. Prerequisite: EE 2123

Offered fall semester

**EE 3223 Digital Electronics** **Three hours**

A study of bipolar and MOS switching circuits, combinational and sequential logic design and programmable logic devices. Includes a design component. Two hours lecture-discussion and one three-hour laboratory per week. Prerequisite: EE 2113 and EN 2112

Offered spring semester

**EE 3501, 3502, 3503 Selected Topics** **One to three hours**

A study of a special area of electrical engineering such as computer design, microprocessor applications, transmission line applications, power electronics, active filters, electric motor design or direct energy converters. May also be used as internship credit or independent study. Prerequisite: consent of department head.

Offered upon sufficient request

**EE 4123 Electromagnetics** **Three hours**

Application of Maxwell's equations to transmission lines, waveguides and antennas. Includes antenna design. Three hours lecture-discussion per week. Prerequisite or corequisite: EN 3224

Offered spring semester