### SPECIAL EDUCATION M.A.
(Select from six emphases)

#### Degree Requirements — 36-74 Credits

See “Special Education M.A.” on page 116.

NOTE: If a student enters the master of arts program in special education without a current teacher licensure, she or he is required to complete additional (separate) admission requirements and course requirements listed under Professional Teacher Education.

#### Required Major Core Credits — 3 hours

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#### Deaf and Hard of Hearing Emphasis

**Required Prerequisites — 7 hours**

- ASLS 266 Normal Speech and Language Development (3)
- ASLS 370 Basic Audiology (4)
- Ability to communicate, with advanced proficiency in American Sign Language and/or a sign system.

**Required Emphasis Credits — 39 hours**

- EDSE 510 Foundations of Special Education (3)
- EDSE 511 Learning Environments and Cultural Considerations (3)
- EDSE 512 Assessment, IEP Development, and Instructional Planning (3)
- EDSE 550 Foundations of Deaf Education (3)
- EDSE 651 Collaboration: Deaf/Hard of Hearing (3)
- EDSE 652 Auditory Skill Development: Deaf/Hard of Hearing (3)
- EDSE 653 Speech: Deaf/Hard of Hearing (3)
- EDSE 654 Language: Deaf/Hard of Hearing (3)
- EDSE 655 Literacy: Deaf/Hard of Hearing (3)
- EDSE 656 Curriculum and Instruction: Deaf/Hard of Hearing (3)
- EDSE 657 Practicum: Deaf/Hard of Hearing (6-12)

**NOTE:** Students are required to complete a sign language proficiency test which will be administered before each student's practicum placement.

#### Early Childhood Special Education Emphasis

**Required Emphasis Credits — 33 hours**

- EDSE 510 Foundations of Special Education (3)
- EDSE 511 Learning Environments and Cultural Considerations (3)
- EDSE 512 Assessment, IEP Development, and Instructional Planning (3)
- EDSE 530 Family/Professional Partnerships (3)
- EDSE 531 Assessment and Planning in Early Childhood Special Education (3)
- EDSE 532 Typical and Atypical Early Child Development: Application to Early Childhood Special Education (3)
- EDSE 533 Curriculum and Instruction in Early Childhood Special Education (3)
- EDSE 534 Research, Policy, and Advocacy in Early Childhood Special Education (3)
- EDSE 537 Practicum in EC/ECSE: Infants and Toddlers (2)
- EDSE 538 Practicum in EC/ECSE: 3-5 Years (2)
- EDSE 539 Practicum in EC/ECSE: 5-8 Years (2)
- EDSE 616 Scientifically Based Literacy Interventions (3)

#### Generalist Emphasis

**Required Emphasis Credits — 36 hours**

- EDSE 510 Foundations of Special Education (3)
- EDSE 511 Learning Environments and Cultural Considerations (3)
- EDSE 512 Assessment, IEP Development, and Instructional Planning (3)
- EDSE 613 Applied Assessment (3)
- EDSE 614 Behavioral Interventions (3)
- EDSE 616 Scientifically Based Literacy Interventions (3)
- EDSE 617 Mathematics and Content Area Learning for Students with Disabilities (3)
- EDSE 618 Educating Students with Significant Support Needs (3)
- EDSE 619 Secondary Services (3)
- EDSE 693 Practicum in Special Education (3-12) Take 6 hours

#### Gifted and Talented Education Emphasis

**Emphasis Requirements — 33 hours**

- EDSE 682 Foundations in Gifted Education (3)
- EDSE 683 The Gifted Learner: Nature and Needs (3)
- EDSE 684 Assessment and Identification in Gifted Education (3)
- EDSE 685 Curriculum & Instructional Practice in Gifted Education (3)
- EDSE 686 Emotional and Social Development of the Gifted and Talented (3)
- EDSE 687 Program Strategies and Services For the Gifted and Talented (3)
- EDSE 688 Communication and Leadership in Gifted Education (3)
- EDSE 689 Creativity in Gifted Education (3)
- EDSE 690 Highest Levels of Learning for the Gifted and Talented (3)
- EDSE 691 Practicum in Teaching the Gifted and Talented (1-12) Take 6 hours

The student must possess a current teaching license, must have at least two years teaching experience and must have a grade point average from the baccalaureate degree of at least 3.0 on a 4.0 scale.

#### Intervention Specialist Emphasis

**Required Emphasis Credits — 30 hours**

- EDSE 670 Legal and Policy Foundations of Special Education (3)
- EDSE 671 Fostering School and Community Relationships (3)
- EDSE 672 Leadership in the School Community (3)
- EDSE 673 Research and Reflective Practice (3)
- EDSE 674 Interventions in Literacy and Numeracy (3)
- EDSE 675 Issues in Special Education Assessment (3)
- EDSE 676 Assessment and Interventions for Students with Challenging Behaviors (3)
- EDSE 677 Transition to Adulthood for Youth with Exceptionalities (3)
- EDSE 678 Strategies for Students with Autism/Significant Needs (3)
- EDSE 679 Interventions for Students with Cultural and Linguistic Differences (3)

#### Visual Impairment Emphasis

**Required Emphasis Credits — 42 hours**

- EDSE 510 Foundations of Special Education (3)
- EDSE 511 Learning Environments and Cultural Considerations (3)
- EDSE 512 Assessment, IEP Development, and Instructional Planning (3)
- EDSE 541 Introduction to Visual Impairment and Deaf-Blindness (3)
- EDSE 543 Braille Codes and Formats (3)
- EDSE 546 Principles of Orientation and Mobility (3)
- EDSE 548 Medical and Educational Implications of Visual Impairments (3)
- EDSE 549 Assessment of Students with Visual Impairments (3)
- EDSE 640 Methods of Teaching Students with Visual Impairment (3)
- EDSE 642 Advanced Seminar in Education of Students with Visual Disabilities (3)
- EDSE 644 Practicum in Education of Students with Visual Impairments, K-12 (6-12)
- EDSE 645 Advanced Braille Codes and Formats (3)

See “Orientation and Mobility (O&M) Endorsement” on page 101.
## COURSE DESCRIPTIONS

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Course Designations

Each course is assigned a prefix that identifies the discipline, field or program offering the course. For example, course numbers in Mathematics are preceded by MATH; and courses in Visual Arts are preceded by ART.

Five groups are identified by course numbers, generally to indicate the difficulty of a course and its location on a continuum of study that leads to general mastery of the content and methodology of a discipline:

- Basic skills courses - 001 through 099 range are not counted in cumulative credits, total credits toward graduation or grade-point-average. These courses are designed to teach students academic skills and general competencies necessary to succeed in college.

- Lower division courses - the 100 range for freshmen and the 200 range for sophomores.

- Upper division courses - the 300 range for juniors and the 400 range for seniors.

- Master's level courses - the 500 and 600 ranges. Juniors and seniors with a cumulative grade-point-average of 3.00 or higher may be admitted to 500-level courses but no undergraduates may be admitted to course numbers above the 500 range.

- Doctoral and Specialist level courses - the 700 range.

Courses with variable titles may have additional prerequisites assigned to specific sections scheduled.

Occasionally, courses that do not appear in the Catalog may appear in the Schedule of Classes. These course numbers end in “98” and are considered experimental. For example, an experimental course in geology might be GEOL 398. Courses ending in “98” cannot be used to meet Liberal Arts Core requirements.

- Courses bearing the designation “gtP” are in Pathways, Colorado’s Guaranteed Transfer Program. These courses are guaranteed to transfer to all Colorado institutions of higher education.

- Courses with variable titles may have additional prerequisites assigned to specific sections scheduled.

- Doctoral and Specialist level courses - the 700 range.
ANT — ANTHROPOLOGY

Department of Anthropology
- Contact (970) 351.2021
- www.unco.edu/anthropology

ANT 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

ANT 523 Fieldwork in Archaeology (4)
Prerequisite: ANT 100 or ANT 120 or equivalent. Required laboratory arranged. Introduction to archaeological field methods through participation in an archaeological field school experience. Students will participate in an on-going archaeological research project for four weeks during the summer. Participation fee.

ANT 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

APCE — APPLIED PSYCHOLOGY AND COUNSELOR EDUCATION

Department of Counseling Psychology
- Contact (970) 351.2731
- www.unco.edu/cebs/counspsy

Department of Counselor Education and Supervision
- Contact (970) 351.2731
- www.unco.edu/cebs/counsel

Department of School Psychology
- Contact (970) 351.2731
- www.unco.edu/cebs/schoolpsy

APCE 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

APCE 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

APCE 558 Diagnosis and Treatment Planning (3)
Graduate students only. An introduction to diagnostic criteria, according to the DSM, for mental and emotional disorders. Students will learn about treatment planning based on causes, symptoms, characteristics, and classifications of abnormal behavior.

APCE 559 Introduction to Clinical Hypnosis (2)
Prerequisites: APCE 612 or equivalent. Consent of instructor. Graduate students only. Introduction to techniques and applications of hypnosis in academic and mental health settings. Achievement of competence with basic hypnotic techniques and their appropriate utilization in psychotherapeutic processes.

APCE 566 At Risk Students: Opportunities and Strategies (3)
Gain knowledge and understanding of at risk students and expand the teachers' repertoire of skills when educating at risk students. Prevalence, family characteristics, and successful strategies will be studied.

APCE 568 Psychology of Women (2)
Graduate students only. Theory and psychological issues influencing gender identity such as definitions of abnormality, achievement and interactional influences upon development.

APCE 601 Practicum (1-3)
Consent of instructor. Majors only. Open by invitation only. Supervised professional activity in student's major field; approximately 37.5 clock hours of work per credit. S/U graded. Repeatable, maximum of three credits.

APCE 602 Foundations of School Counseling (3)
Study the conceptual foundation of the counseling and school counseling professions including history, philosophy, principles and trends. Includes functions of counselors, administrators, teachers and parents in meeting students' needs.

APCE 603 Understanding Children, Adolescents, and Their Systems (3)
Prerequisites: APCE 607. A comprehensive study of therapeutic approaches and techniques for children and adolescents. The course focuses on the therapeutic involvement of families and others, with children, in a variety of settings.

APCE 605 Group Laboratory Experience (1)
Co-requisite: APCE 606 or APCE 662. Consent of coordinator. Provides an opportunity to participate in a group experience. S/U graded.

APCE 606 Theories and Practices in Group Guidance (3)
Prerequisites: APCE 602 and APCE 607. Co-requisite: APCE 605. Majors only. Must be taken at site of admission. Study theories and methods of group counseling including applications in school settings for educational planning, career decisions and interpersonal relations, and forming and facilitating guidance groups in educational settings.

APCE 607 Theories of Counseling (3)
Majors only or consent of instructor. The study and critical analysis of the major counseling theories and elements of effective psychotherapy as they apply to the counseling process.

APCE 608 Organization, Administration and Evaluation of School Counseling Programs (3)
Prerequisite: APCE 602. Majors only or consent of instructor. The major focus of this applied course is on the design, development, implementation, and evaluation of a comprehensive school counseling program that meets national standards.

APCE 609 Foundations of Play Therapy (3)
Prerequisites: Master's degree in appropriate mental health profession, or enrollment in a APCE graduate program, or consent of instructor. Course includes an overview of play therapy principles, history, techniques, and modalities. Course features a practicum element during which students conduct one play therapy session, under supervision of the instructor.

APCE 612 Practicum in Individual Counseling (5)
Prerequisite: APCE 607 and consent of instructor. Consent of instructor or concurrent enrollment in APCE 657. Majors only. Must be taken at site of admission. Requires 15 hours per week minimum. Receive supervised experience in counseling and interview analysis, including use of audio and video tapes, client and supervisor feedback and weekly seminar. S/U graded. Repeatable, maximum of 10 credits.

APCE 614 Internship in School Counseling and Guidance (1-9)
Prerequisites: APCE 608, APCE 612 and consent of instructor. Refer to program handbook. Must be taken at site of admission. A culminating field experience for counseling students engaged in counseling and guidance activities in elementary, middle, and high school settings under the supervision of one or more licensed school counselors. S/U graded. Repeatable, maximum of 18 credits.

APCE 615 Supervision in Agencies and Schools (1)
Prerequisite: APCE 612 and consent of instructor. Provides an overview of the supervision process and the theoretical orientation and practical skills necessary to function effectively as a supervisor of counselors.
APCE — Applied Psychology and Counselor Education

APCE 616 Career Theory, Counseling and Assessment (3)
Study theory and methods of career counseling, introduce and become familiar with career assessment instruments, and discuss current issues in the field of career counseling.

APCE 617 Play Therapy: Theory and Practice (3)
Prerequisites: APCE 612 and consent of instructor. Study theoretical bases for play therapy and conduct play therapy under faculty supervision.

APCE 618 Practicum in Child, Adolescent, and Family Interventions (5)
Prerequisite: APCE 607 and consent of instructor. Supervised experience in intervention with children, adolescents, and families; including counseling and interview analysis, the use of audio and video tapes, client and supervisor feedback, and weekly seminars.

APCE 619 Practicum II in Individual Counseling (3)

APCE 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

APCE 623 Understanding and Counseling Diverse Populations (3)
Majors only. An examination of counselor training issues and counseling skills relevant to working with clients with diverse cultural backgrounds. This course will sensitize students to the concerns of various cultural groups.

APCE 624 Assessment and Treatment of Substance Abuse (3)
Examination of major treatment approaches to substance abuse and theories of etiology. Investigation of pharmacological and medical aspects of commonly used substances. Explore addiction and abuse in related compulsive behaviors.

APCE 627 Counseling Interventions and Techniques for Talented and Gifted Students (2)
Study counseling interventions and techniques appropriate for talented and gifted students, their parents, siblings, peers, teachers and other school personnel.

APCE 638 Human Behavior Analysis (3)
Overview of human behavior analysis, with a focus on school-based behavioral assessment and intervention.

APCE 640 School-Based Psychological Consultation (3)
Addresses the practice of psychological consultation with school personnel and families. Includes coverage of major consultation theories, school culture, and how consultation is applied to service delivery systems in schools.

APCE 644 Assessment I: Cognitive and Academic Functioning (3)
Prerequisite: APCE 670 and consent of instructor. Advanced supervised experience using a problem-solving approach to assess, plan, and monitor child, adolescent, and adult functioning in areas of cognitive processing and academic achievement in school and community settings.

APCE 646 Assessment II: Socioemotional and Behavioral Functioning (5)
Prerequisites: APCE 644 and consent of instructor. Advanced supervised experience using a problem-solving approach to assess, plan, monitor child, adolescent, adult functioning in personality, behavior, social-emotional, and adaptive skills in school and community settings.

APCE 648 Assessment III: Early Childhood (3)
Prerequisites: APCE 644, APCE 646 and consent of instructor. Covers psychological services for infants and toddlers. Includes law, typical and atypical development, multicultural issues, and intervention services. Provides practice in assessment, with an emphasis on nontraditional methods.

APCE 650 Orientation to Clinical Counseling (3)
Provides conceptual foundation for the counseling profession with emphasis on community counseling. Places the profession in a historical context; introduces associations, licensure, certification, accreditation, codes of ethics, and practice settings.

APCE 653 Social and Community Psychology (3)
Provides advanced study in the research, theory, and practice of social and community psychology applied to individual, families, groups, and social systems.

APCE 657 Legal and Ethical Aspects of Counseling and Psychology (3)
Covers ethics, the psychology of law and legal regulation in professional counseling, education and psychology. Ethical standards, litigation and legal regulation are examined in regard to professional practice.

APCE 660 Psychological Consultation: Theory and Practice (3)
Prerequisite: APCE 607. Overview of consultation theory and practice. Mental health, expert, collaborative, behavioral and organizational models will be discussed and applied to problems in school and agency settings.

APCE 661 Psychological Trauma and Intervention for Individuals, Families and Communities (3)
Prerequisites: APCE 558, APCE 607 and APCE 657. An overview of the impact of crises, disasters, and other trauma-causing events on individuals, families and communities. Students will be introduced to strategies and interventions for working with this population.

APCE 662 Group Dynamics and Facilitation (3)
Prerequisite: APCE 607. Co-requisite: APCE 605. Majors only. Must be taken at site of admission. Course features an examination of theoretical bases of group counseling including group types, group development, leadership styles and skills, and application to various populations. Ethical group leadership is emphasized.

APCE 663 Research Apprenticeship: School Psychology (1-2)
Consent of instructor. Serve as research apprentice to faculty member; must complete minimum of 2 semester credits, 75 clock hours each. Repeatable, maximum of two credits.

APCE 665 Family Systems (3)
Study general systems theory of family development and interactions. Structural, communication and behavioral approaches to family therapy will be examined as well as ethics, legal issues and current research.

APCE 667 Crisis Intervention in the Schools (2)
Examination of crisis intervention theory and strategies in school settings. Emphasis on application to child-centered crises such as abuse, divorce, family violence, loss, school-based violence and suicide.

APCE 668 Sexual Counseling (3)
Recommended for advanced students. Counselors explore the treatment of various sexual issues. Topics covered: male and female sexual systems, sexual myths, variations in sexual behavior and common sexual concerns. Various therapeutic approaches are presented.

APCE 669 Advanced Methods: Couples and Family Therapy (3)
Prerequisite: APCE 665. Prerequisite or corequisite: APCE 612. Course expands on family therapy models presented in APCE 665 and includes other significant models. Training activities include diagnosis, assessment, case presentations, enactments, video use and case analysis.

APCE 670 Principles of Psychometrics and Assessment (3)
Understanding psychological testing through an overview of measurement principles, the psychological assessment process, data management, test construction and development, and the use of test results in individual educational evaluations and intervention planning.
APCE 673 Appraisal and Assessment in Counseling (3)
Recommended prerequisite: SRM 600. Majors only. This course features an overview of individual and group approaches to assessment used by professional counselors. Course participants evaluate instruments, interpret results, and demonstrate knowledge of psychometric properties.

APCE 674 Assessment for Intervention: Cognitive and Academic (5)
Consent of instructor. Covers the historical and theoretical bases of psychological and educational assessment concentrating primarily in the areas of cognitive abilities and academic achievement and their relation to interventions.

APCE 675 Social and Behavioral Assessment in the Schools (3)
Prerequisites: APCE 674, APCE 781. Understand and implement techniques for assessing social and behavioral functioning in children and adolescents for the purpose of designing effective interventions in home and school settings.

APCE 678 Assessment for Intervention: Personality and Behavior (5)
Prerequisites: APCE 674 and consent of instructor. Supervised experience in administration and interpretation of ecologically valid psychological data including personality, behavioral, cognitive and academic. Emphasis on designing, implementing and evaluating ecologically-based interventions.

APCE 680 Special Populations Practicum (1-3)
Prerequisite: APCE 678. School psychology students explore in depth a special population including those with handicaps that interfere with learning. Instructor arranges research and involvement with a population not included in APCE 678. S/U graded. Repeatable, maximum of three credits.

APCE 681 Practicum in Consultation (3)
Prerequisite: APCE 660. Supervised field experience concurrent with professional seminar. Application of case and/or systemic consultation strategies to problems/challenges in the schools or social service agencies.

APCE 691 Internship in Clinical Counseling: Couples and Family Therapy (1-9)
Prerequisite: APCE 694 and consent of coordinator. Refer to program handbook. Majors only. Must be taken at site of admission. Minimum of 600 hours on-site required. A culminating field experience for qualified community counseling students in areas of specialty. S/U graded. Repeatable, maximum of 18 credits.

APCE 692 Internship in Clinical Counseling (1-9)
Prerequisite: APCE 612 and consent of coordinator. Refer to program handbook. Majors only. Must be taken at site of admission. Minimum of 600 total on-site hours required. A culminating field experience for qualified community counseling students in areas of specialty. S/U graded. Repeatable, maximum of 18 credits.

APCE 694 Practicum in Couples and Family Therapy (4)
Prerequisites: APCE 612 or APCE 712, APCE 669. Consent of practicum coordinator. Majors only. Receive supervised experiential training in counseling with families. Develop diagnostic and therapeutic skills in systemic approaches. S/U graded.

APCE 695 Seminar: Contemporary Issues in Couples and Family Therapy (2)
Prerequisites: APCE 665. Majors only. Study of interventions utilized within the major approaches to couple and marital therapy. Covers current issues and research in family therapy.

APCE 701 Professional Development Seminar in Counseling Psychology (1)
Majors only. An overview of current issues in the discipline of counseling psychology, as well as an introduction to the program and the faculty in the division. Repeatable, maximum of two credits.

APCE 702 Practicum in Counseling (4)
Consent of practicum coordinator. Requires 12 hours per week minimum. Majors only. Supervised individual counseling experiences in a laboratory setting. Supervision will be directed toward improvement of counseling skills and case management. S/U graded.

APCE 703 Professional Development Seminar in Counselor Education (1)
Majors only. An overview of current professional issues in Counselor Education with special focus on understanding and developing professional identity in the field. Research will be strongly emphasized. Repeatable, maximum of three credits.

APCE 707 Seminar in Personality and Counseling Theories (3)
Majors only. A comparative and critical in-depth analysis of personality and counseling theories including the interrelationship, philosophical foundations and practical applications.

APCE 710 Seminar in Instruction, Pedagogy, and Evaluation in Counseling and Psychology (3)
Prerequisites: APCE 702 and APCE 703. This course provides in-depth study of instruction, pedagogy, and evaluation procedures in counseling and counselor education. Instructional methods, techniques, and evaluation models related to counselor education will be discussed.

APCE 712 Advanced Practicum in Individual Counseling (4)
Prerequisites: APCE 702, APCE 707 and consent of practicum coordinator. Majors only. For the student with prior counseling experience, this course offers opportunity to develop counseling skills and philosophy in depth with clients in an individual counseling situation. S/U graded.

APCE 713 Practicum in Supervision of Play Therapy (3)
Prerequisite: APCE 617. Consent of practicum coordinator. Majors only. Doctoral candidates receive experience in supervising child psychotherapy training through working with a staff member.

APCE 714 Practicum in Supervision of Counseling (3-6)
Prerequisites: APCE 702, APCE 712 and consent of practicum coordinator. Majors only. Students gain experience with a faculty member in supervising counseling practice. Repeatable, maximum of six credits.

APCE 715 Seminar in Counselor Supervision and Theory (2)
Prerequisites: APCE 702, APCE 707, APCE 712 and consent of practicum coordinator. Co-requisite: APCE 714. Majors only. Study problems involved in training individuals to engage in the therapeutic process.

APCE 716 Research Seminar in Counselor Education (3)
Majors only. Review and analysis of reported research in counselor education with special emphasis on research published during the last ten years in the professional journals.

APCE 733 Research Apprenticeship (1)
Consent of instructor. Majors only. Requires approximately 3-5 hours per week. Serve as an apprentice to a chosen faculty member and work on professional endeavors such as course planning, writing and research, library searches. S/U graded. Repeatable, maximum of two credits.

APCE 737 Single-Case Research Methods (2)
Prerequisite: APCE 638. Provides conceptual and practical knowledge and skills in the design, implementation, and interpretation of single-case research designs. Application to education and to applied behavior analysis stressed.

APCE 738 Practicum in Evidenced-Based Interventions (3)
Prerequisites: APCE 607, APCE 638, APCE 737, APCE 747 and consent of practicum coordinator. Practice implementing interventions with children and adolescents with a variety of behavioral and emotional problems, with special emphasis on identifying and implementing evidence-based interventions.
APCE 746 Advanced Seminar in Counselor Education and Supervision (3)
Prerequisite: APCE 703. Concentrated study, application, synthesis and evaluation of career development and theory, and professional identity for counselors, counselor educators and supervisors. Emphasis on application of leadership and advocacy skills.

APCE 747 Psychological Aspects of Academic Programming and Intervention (4)
Addresses applied psychological aspects of curriculum, instruction, and learning environment in relation to the development, implementation and monitoring of academic interventions in the areas of reading, math and written language.

APCE 748 Instruction, Supervision and Leadership in School Counseling (3)
Prerequisites: APCE 602, APCE 608. An introduction to the history and theory issues and trends in professional school counseling with an emphasis on preparation and supervision of school counselors and leadership in implementation of school counseling programs.

APCE 753 Supervised Practicum in College Teaching (1-3)
Consent of instructor. Majors only. Doctoral students receive experience in observation and supervised practice in college teaching. Repeatable, maximum of six credits.

APCE 757 Intervention for Severe and Low Incidence Disabilities (3)
Prerequisite: APCE 558, APCE 560, APCE 747, APCE 758. Addresses severe and low-incidence disabilities including chromosomal, sensory related, low cognitive, motor disabilities, and autism spectrum disorder. Emphasis on functionally focused assessment, functional skills, consultation and family-professional partnerships.

APCE 758 Advanced Psychopathology (3)
Prerequisite: PSY 355 or APCE 558. Consent of instructor. Acquire understanding of developmental and behavioral disorders of childhood through adulthood. Thorough knowledge of specific pathologies and conditions through intensive reading, research or practical experience.

APCE 762 Practicum in Group Facilitation (4)
Prerequisites: APCE 605 and APCE 662 or equivalent, APCE 702, APCE 712. Consent of instructor. Requires a minimum of 12 hours per week. Majors only. Receive supervised experience in the role of group facilitator, including feedback on group process, leadership and intervention skills and problem areas. S/U graded.

APCE 763 Legal and Professional Foundations of School Psychology (4)
Professional issues and problems concerning the school psychologist, including certification and licensure requirements, confidentiality, legal and ethical issues, roles and responsibilities.

APCE 773 Practicum in Supervision of Group Facilitation (3)
Prerequisite: APCE 762 and consent of practicum coordinator. Majors only. Doctoral candidates receive experience in supervision of group facilitator training. Work with regular staff member supervising group practicum, observe techniques and processes and receive feedback on progress.

APCE 774 Practicum in Supervision of Family Therapy (3)
Prerequisites: APCE 694 and consent of practicum coordinator. Majors only. Doctoral candidates receive experience in supervision of family therapist training. Work with regular staff member in supervising family therapy practicum, observe techniques and processes, receive feedback on progress.

APCE 775 Supervision in School Psychology (3)
Prerequisite: APCE 644 and consent of instructor. Provides an overview of theories and practice of school psychology. Additionally, under faculty supervision, students participate and apply their skills in the instruction and supervision of students in testing courses. Repeatable, maximum of 9 credits.

APCE 776 Externship in School Psychology (1)
Prerequisites: APCE 644, APCE 646 and consent of instructor. Supervised experience in clinical and/or school-based practice. Must successfully complete one credit in Psychological Services Clinic before eligible to complete second credit in PSC or approved site. Repeatable, no limitations.

APCE 777 Applied Neuropsychology (3)
Prerequisites: APCE 612 or APCE 618 or APCE 702; and APCE 672 and APCE 674. Study of brain-behavior relationships emphasizing procedures for diagnosing neurobiological disorders, neuropsychological intervention and treatment planning, and professional practice issues from conception to adulthood.

APCE 778 Clinical Neuropsychology Practicum (3)
Prerequisites: APCE 612 or APCE 618, and APCE 678 and APCE 777. Supervised practice in administering and interpreting neuropsychological tests and qualitative procedures for children, adolescents, and adults. Emphasizes intervention development, rehabilitation, neuropsychological report writing, and use of neuropsychological test batteries.

APCE 779 Practicum in School Psychology (3)
Prerequisites: APCE 607, APCE 638, APCE 660, APCE 674, APCE 678, APCE 747 and consent of instructor. Supervised practice in providing comprehensive psychological services to children in grades preschool to 12. Experience in public schools or affiliated school-related agencies with supervision by practicing licensed school psychologists. Repeatable, no limitations.

APCE 781 Evaluation of Psychological Services (3)
Learn the theory and practice of psychological program evaluation. Use technology and measurement skills to promote systems change by evaluating the effectiveness of consultation, therapy, guidance, academic interventions, and placements.

APCE 782 Introduction to Rorschach Administration and Scoring (3)
Prerequisites: APCE 558, APCE 674 and APCE 678. Learn conceptual basis for comparing projective with traditional psychometric procedures and begin skills in administration and scoring of Rorschach test.

APCE 789 Internship in School Psychology (1-8)
Prerequisite: Permission from your advisor and the internship coordinator. Supervised experience in the practice of school psychology with children and adolescents in a school or clinic setting. (See Ph.D./Ed.S. Internship Guidelines for complete description.) S/U graded. Repeatable, maximum of 16 credits.

APCE 791 Internship in Counseling Psychology (1-5)
Consent of instructor. Majors only. 2,000-hour predoctoral internship at a site meeting APPIC and/or APA training standards to be completed in 3-6 consecutive semesters after completion of all Psy.D. coursework. Repeatable, maximum of 18 credits.

APCE 792 Internship in Counselor Education and Supervision (1-6)
Consent of instructor. Majors only. 2,000-hour predoctoral internship at a site meeting APPIC and/or APA training standards to be completed in 3-6 consecutive semesters after completion of all Psy.D. coursework. Repeatable, maximum of 12 credits.

APCE 793 Psychological Services Clinic I (1)
Prerequisites: APCE 702, APCE 712, and either APCE 694 or APCE 617, and consent of practicum coordinator. Majors only. An introduction for students to gain experience as staff clinicians, conducting intake sessions, making recommendations for treatment, participating in clinic administrative duties and providing therapeutic services to clients. S/U graded.

APCE 794 Psychological Services Clinic II (2)
Prerequisites: APCE 702, APCE 712, APCE 793 and consent of practicum coordinator. Majors only. This course offers the opportunity to refine assessment and therapeutic skills with children, adolescents and adults, couples or families, and refine administrative skills including outreach to community agencies. S/U graded. Repeatable, maximum of four credits.
APCE 979 Doctoral Proposal Research (1-4)
Consent of instructor. Majors only. Required for all doctoral students. Student must earn a maximum of 4 hours of credit in this course in partial fulfillment of requirements for all doctoral degrees, before admission to candidacy. S/U graded. Repeatable, maximum of four credits.

APCE 979 Doctoral Dissertation (1-12)
Consent of instructor. Majors only and admission to candidacy. Required of all doctoral candidates. A student must earn a minimum of 12 hours of credit for the dissertation in partial fulfillment of requirements for all doctoral degrees. S/U graded. Repeatable, no limitations.

APCE 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

ART — ART & DESIGN

School of Art & Design
• Contact (970) 351.2143
• www.arts.unco.edu/artanddesign

ART 181 History of Art I (3)
This is a general survey class of Western and Non-western art of Ancient cultures from Paleolithic art to the Byzantine Empire. The emphasis of this survey is on the major movements and civilizations, methods of analysis, historical and cultural context. (LAC, gtp)

ART 182 History of Art II (3)
This is a general survey class of Western and Non-western art from Early Medieval to the Baroque Art. The emphasis of this survey is on the major movements and civilizations, methods of analysis, historical and cultural context. (LAC, gtp)

ART 183 Art I (3)
Elements and principles of art. Exploration of the elements of line, shape and color in two-dimensional and three-dimensional design and drawing projects. Experiences in conceptualization and visual problem solving. Majors/Minors only.

ART 184 Art II (3)
Prerequisite: ART 183. Elements and principles of art. Exploration of the elements of value, space, and texture in two and three-dimensional design and drawing projects. Experiences in conceptualization and visual problem solving. Majors/Minors only.

ART 211 Ceramic Design (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Design, construction and fire ceramic forms using several different approaches to hand building and firing. Receive general background in the history of ceramic arts, clays, glazes and methods of firing.

ART 212 Wheel Throwing (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Begin throwing on the potter’s wheel. Learn techniques of centering, opening and raising clay into basic pottery forms.

ART 221 Fiber Design I (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. A studio course involving several fiber construction processes and fabric surface treatments in two or three dimensions.

ART 223 Weaving (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Introduction to the fundamentals of loom weaving as an art form, emphasizing applied design problems.

ART 231 Painting I (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Fundamentals of painting. Materials and techniques in basic procedures of studio painting using acrylic paint.

ART 234 Drawing I (3)
Deal in depth with concepts, techniques and materials. Problem areas include composition, content, technical concerns, use of color and a range of material use from traditional to contemporary alternatives. Majors only.

ART 248 Introduction to Art Education/Art for the Exceptional Child (3)
Prerequisites: ART 181, ART 182, ART 183, ART 184, ART 234. Introducing practicum experience in art education program. Assigned placements in K-12 classrooms. An overview of the characteristics, needs, and instructional adaptations suitable for teaching visual arts to the exceptional learner. Majors/Minors only. Sophomores or above.

ART 253 Intaglio Printmaking (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Introduction to intaglio printmaking techniques, including drypoint, engraving and etching in black and white. Traditional and experimental approaches are explored.

ART 254 Relief Printmaking I (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Investigations in relief printmaking media including linoleum cuts, wood cuts, wood engravings, and collagraphs printed in black and white and in color.

ART 261 Sculpture I (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Introduction to materials, processes and concepts fundamental to making sculpture.

ART 265 Jewelry (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Introduction to materials, processes and concepts basic to making jewelry.

ART 271 Basic Photography (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Learn fundamentals of photography. Study principles of black and white photography, including exposing, processing, printing and finishing techniques.

ART 308 Workshop in Art (1-4)
Arts workshops are for the study of special areas in art, art education, art history, graphic arts and related fields. Specific workshop content is determined by subtitle. Repeatable, maximum of six credits per subtitle.

ART 340 Clinical Experience: K-12 Art (2)
For Art Education majors. Provisional admittance to PTEP required. Consent of instructor. Gain practical experience in the classroom with a variety of materials, subject matter and with varying age groups. Requires classroom observation and participation with weekly seminar. Repeatable, maximum of four credits.

ART 356 Monotypes (3)
Prerequisite: ART 181, ART 182, ART 183, ART 184, ART 234. Investigations in techniques of creating monotypes and monoprints (one-of-a-kind printed images). Individual imagery and technical development are emphasized. Repeatable, maximum of six credits.

ART 440 Foundations of Art Education (3)
Prerequisites: ART 181, ART 182, ART 183, ART 184, ART 234, EDPE 110. An in-depth study of the field of art education and pre-professional related areas including: learning theory, aesthetics and psychology. Majors/Minors only or by instructor consent. Juniors or above.

ART 441 Cultural Studies in the K-12 Curriculum (2)
Prerequisites: EDPE 110; ART 181, ART 182, ART 183, ART 184, ART 234; or Instructor Consent. The course examines the teaching of art based on cultural context. Cultural contexts will be examined through artmaking in service learning/teaching opportunities and by the interpretation of artwork from a variety of cultures.

ART 442 Curriculum and Instruction in Art: Studio Strategies (3)
Prerequisites: ART 181, ART 182, ART 183, ART 184, ART 234, EDPE 110. Study curriculum development and art learning activities appropriate for instruction in elementary and secondary art education. Majors/Minors only or by instructor consent. Juniors or above.

ART 466 Visual Arts Student Teaching Seminar (1)
Co-requisite: EDPE 444. Prerequisite EDPE 120 or 125. This seminar provides persons actively involved in the student teaching program in Visual Arts with a support system and pertinent information to assist them during their field experience.

ART 508 Workshop (1-4)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, maximum of six credits per subtitle.
ART 511 Graduate Ceramic Design (3)
Prerequisite: ART 311 or equivalent. Design and assembly of hand-built ceramic forms at an advanced level. An exploration of stoneware, raku and sodium vapor firing processes. Repeatable, maximum of six credits.

ART 512 Wheel Throwing (3)
Prerequisite: ART 312 or equivalent. Develop an individual approach to wheel thrown ceramic forms at an advanced level. Exploration of various methods of ceramic decoration and firing. Repeatable, maximum of six credits.

ART 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

ART 521 Fiber Design (3)
Advanced design techniques in fibers. Repeatable, maximum of six credits.

ART 523 Weaving (3)
Concentrate in a selected area of weaving on an advanced design concept. Repeatable, maximum of six credits.

ART 533 Life Drawing (3)
Prerequisite: ART 333 or equivalent. Advanced life drawing emphasizing development of personal interpretations of the human form. Repeatable, maximum of six credits.

ART 537 Computer Art (3)
Further exploration in applying computer graphics to the visual arts and integrating computer-based technologies related to design, desktop publishing and page layout. Some experience in computer graphics is recommended.

ART 538 History of Computer Graphics (4)
Prerequisite: Select one of the following courses: ART 171, ART 437, ART 537, ART 471, ART 571. Facts and aspects related to computer applications in art, graphics animation, interactive art, sww. Analyses contrast images, concepts and approaches to artistic quality and technological solutions in electronic art.

ART 539 Computer Graphics Studio (1-3)
Consent of instructor. Advanced, individualized or specialized study on specific topics related to computer graphics. Repeatable, maximum of nine credits.

ART 553 Advanced Intaglio Printmaking (3)
Prerequisite: ART 353 or consent of instructor. Advanced investigations in intaglio printmaking techniques, including color printing. Individual imagery and technical mastery will be emphasized. Repeatable, maximum of nine credits.

ART 554 Advanced Relief Printmaking (3)
Prerequisite: ART 254 or consent of instructor. Advanced investigations in relief printmaking techniques. Individual imagery and technical mastery are emphasized. Repeatable, maximum of nine credits.

ART 556 Advanced Monotypes (3)
Prerequisite: ART 356 or consent of instructor. Advanced investigations in monotype and monoprint techniques. Individual imagery and technical mastery are emphasized. Repeatable, maximum of nine credits.

ART 561 Graduate Sculpture (3)
Self-directed or assigned work in specific areas of sculpture. Advanced technical skills emphasized. Repeatable, maximum of six credits.

ART 569 Web Style Design (3)
Prerequisite: ART 437 or ART 471. Provide working knowledge about principles and practices in Website design in terms of art applications. Design knowledge required aesthetically to content for Web Page Layout.

ART 571 Computer Graphics (3)
Prerequisite: ART 471 or consent of instructor. Further exploration of computer graphics concepts, application of recently developed techniques to create interactive, interdisciplinary 2-D and 3-D projects, submitting for competitions and professional magazines. Portfolio and paper presentation required.

ART 573 Digital Photography Manipulation (3)
Prerequisite: ART 271. Study principles of localized manipulation and multiple image digital processing techniques. Students will also acquire a working knowledge of post processing and calibration equipment that will enable the student to understand both the hardware and software involved with digital post processing. Majors/minors only or by consent of instructor.

ART 576 Advanced Black and White Photography (3)
Prerequisite: ART 274. Learn advanced concepts and practices of black and white film photography. Techniques also include controlling a large format camera, close-up/macro photography, processing sheet film, calibrating the film/paper system for the individual, printing on fiber based paper and toning prints. Majors/minors only or by consent of instructor.

ART 577 Photographic Illustration and Lighting Techniques (3)
Prerequisite: ART 271 or equivalent. Learn creative lighting techniques for illustration and portraiture. Study available light and studio lighting for black and white and color photography.

ART 578 Alternative Photographic Expression (3)
Prerequisite: ART 271. Explore non-traditional methods of photographic techniques and processes. This class is designed to facilitate the use of alternative cameras/ lenses, alternative non-silver processes and creative presentation techniques. Majors/minors only or by consent of instructor.

ART 600 Research Methods in Art (3)
Learn appropriate art, art historical and art education research methodology and procedures for inquiry. Present research according to approved style guidelines. Review Art program and Graduate School requirements.

ART 615 Ceramic Studio (1-3)
Consent of instructor required. Individualized or specialized study on specific topics in ceramics. Repeatable, maximum of nine credits.

ART 622 Directed Studies in Art (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

ART 625 Fibers Studio (1-3)
Consent of instructor. Individualized or specialized study on specific topic in fibers. Repeatable, may be taken three times.

ART 631 Painting (3)
Prerequisite: ART 431 or equivalent. Advanced problems in painting in either acrylic, oils or watercolor. Emphasis is on development of personal imagery and working in a series, thematic development. Repeatable, maximum of six credits.

ART 634 Drawing (3)
Advanced work in development on thematic imagery, inventive media, unique and personal solutions to visual problems. Repeatable, maximum of six credits.

ART 635 Drawing Studio (1-3)
Consent of instructor required. Individualized or specialized study on specific topics in drawing. Repeatable, maximum of nine credits.

ART 636 Painting Studio (1-3)
Consent of instructor required. Individualized or specialized study on specific topic in painting. Repeatable, maximum of nine credits.

ART 640 Literature of Art Education (3)
Survey historical and contemporary literature on theory, research and practice in art education and related areas.

ART 641 Art Curriculum and Instruction: Cultural Studies (3)
Study methods for teaching art history. Research art analysis, art criticism and art theory for developing procedures for instruction.

ART 642 Art Curriculum and Instruction: Studio Methods (3)
Research and develop studio art content, processes and sequencing appropriate for the elementary and secondary art curriculum.
ART 648 Art and the Exceptional Student (2)
Study art for the exceptional in depth. Involvement in the review of literature and research field in the development of an art curriculum specific to individual interest area.

ART 655 Advanced Printmaking Studio (1-3)
Consent of instructor. This class provides a working environment for large scale printmaking by utilizing all facets of printmaking techniques, serious edition printing and special projects. Repeatable, maximum of nine credits.

ART 660 Graduate Sculpture Studio (1-3)
Self-directed studies in selected sculptural modes or processes. Repeatable, maximum of nine credits.

ART 661 Advanced Graduate Sculpture (3)
Select problems in the creation of sculpture with emphasis on critical and technical competencies. Repeatable, maximum of six credits.

ART 672 Photography Studio (1-3)
Instructor consent required. Advanced individualized or specialized study in photography for graduate students. Repeatable, maximum of nine credits.

ART 680 Seminar in Art History (1-4)
Discuss advanced and specialized art historical topics. Take concurrently with 300 level art history course. Subject area determined by subtitle. Repeatable, under different subtitles.

ART 692 Internship in Art (1-5)
Graduate art majors only. Supervised professional activity in major field of study. Must spend a minimum of 30 clock hours per credit hour. Maximum of five credits per semester. Repeatable, under different subtitles.

ART 699 Thesis (1-6)
Prerequisite: ART 600. A written thesis is required of all master's degree candidates in visual arts. The thesis must be approved by the supervising committee and meet all requirements of the Graduate School. S/U graded. Repeatable, no limitations.

ASL — AMERICAN SIGN LANGUAGE

School of Special Education
- Contact (970) 351.2691
- www.unco.edu/cebs/sped

ASL 101 American Sign Language I (3)
Introduces basics of American Sign Language and Deaf Culture; designed for students who have limited/no knowledge of ASL, focusing on receptive and expressive skills in basic conversation, dialogue, vocabulary development. (LAC)

ASL — AUDIOLGY AND SPEECH-LANGUAGE SCIENCES

School of Human Sciences
- Contact (970) 351.2734
- www.unco.edu/nhs/asls

ASLS 266 Normal Speech and Language Development (3)
Normal speech and language development and their relationship to other aspects of child development. Should be taken after the English composition LAC requirement is completed.

ASLS 370 Basic Audiology (4)
Pathologies and disorders of the auditory vestibular system, pure-tone testing, methods of speech audiometry, interpretation of audiometric data in terms of physical, social and educational effects. An introduction to aural rehabilitation.

ASLS 474 Clinical Practicum in Audiology (1)
Prerequisite: ASLS 370 and 3.0 GPA in major courses with consent of clinical coordinator. Perform basic audiomeric testing: audiometric screening, routine hearing evaluation and impedance audiometry. S/U graded.

ASLS 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

ASLS 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

ASLS 515 Foundations of Research and Writing (1)
Introduction to graduate-level writing and research strategies. Content includes identification of problems/research topics, use of library databases and web sources, organization of content, and use of current APA style.

ASLS 516 Professional Issues in SLP (1)
Professional issues in speech-language pathology as they relate to the public schools, medical settings and private practice. Topics include the law, ethics, risk management and third party reimbursement.

ASLS 553 Neuroanatomy and Neurophysiology of Communication (3)
Neuroanatomy-physiology related to speech, language and hearing; neuroopathologies of the central nervous system and results of neurological insult.

ASLS 563 Voice and Resonance Disorders (3)
Etiologies and symptoms of dysphonia and laryngectomies, assessment and intervention strategies. Resonance disorders associated with cleft lip and palate and causes, including assessment and intervention in a team approach.

ASLS 569 Advanced Diagnostic Procedures (1-2)
Must be taken for a minimum of six credits. Perform speech-language screenings and diagnostic evaluations. Repeatable, maximum of eight credits.

ASLS 570 Rehabilitative Audiology (2)
Prerequisites: ASLS 478 or equivalent. Theory and procedures for rehabilitation of children and adults with hearing handicap.

ASLS 571 Speech and Hearing Science (4)
(3 lecture, 1 lab) Laboratory required. Models of speech production and perception, measurement techniques for simple and complex signals. Lab addresses application of models of speech production and perception to experimental and clinical situations.

ASLS 574 Clinical Practicum in Audiology (1)
Prerequisites: 3.0 GPA in major courses or consent of clinical coordinator. Perform basic audiometric testing: audiometric screening, routine hearing evaluation and impedance audiometry. S/U graded.

ASLS 580 Practicum in Rehabilitative Audiology (1-2)
Habilitation/rehabilitation of acoustically-handicapped persons. Repeatable, maximum of six credits.

ASLS 582 Educational Audiology (3)
Explore services for hearing impaired children in the schools. Educational implications of auditory processing disorders are also covered.

ASLS 583 Clinical Practicum: Introduction (2)
Introduces students to issues related to treating individuals with speech and/or language disorders. Topics include writing treatment plans, evaluating clinical performance, working with supervisors, measuring outcomes, and risk management. S/U graded.

ASLS 584 Screening Procedures in Speech-Language Pathology (1)
Presents theory and procedures related to screening speech and language abilities in children and adults. Provides practice in implementing procedures in a variety of settings. S/U graded.

ASLS 585 Clinical Practicum in Speech-Language Pathology: Intermediate (1-2)
Prerequisite: ASLS 583. Students improve clinical skills and learn about issues related to clinical practice, including ethics, counseling, self-evaluation, treatment notes, efficacy, counseling techniques, sharing information verbally and relating to diverse populations. Repeatable, maximum of eight credits.
ASLS 586 Clinical Practicum in Speech-Language Pathology: Intermediate/Advanced (2)
Prerequisite: ASLS 585. Students improve their clinical skills and learn about issues related to clinical practice, including continuing education, conflict resolution, data keeping methods, technology, and clinical research. Repeatable, maximum of four credits.

ASLS 587 Advanced Audiology (3)
Theory and practice of advanced techniques of audiometric assessment.

ASLS 588 Clinical Practicum in Speech-Language Pathology: Advanced (2)
Prerequisites: ASLS 586. Students improve their clinical skills and learn about issues related to clinical practice in medical settings, including interviewing, legislation, professional liability, marketing, clinical fellowship year, leadership, inservices.

ASLS 592 Internship in Public Schools (2-15)
Prerequisites: Minimum of 100 clock hours of previous supervised clinical experience and/or consent of advisor. Supervised full-time experience working with school children. S/U graded. Repeatable, maximum of 15 credits.

ASLS 594 Practicum and Advanced Topics in Audiology (1-6)
Prerequisite: ASLS 574. Perform the full range of clinical audiological services, including special testing, hearing aid evaluations and dispensing of hearing aids. Repeatable, maximum of fifteen credits.

ASLS 615 Research in Audiology and Speech-Language Pathology (1-4)
Engage students in systematic inquiry in communication disorders. Evaluate current research, pose research questions, formulate research designs, and develop formal research proposals. Advanced students conduct research and plan dissemination. Repeatable.

ASLS 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

ASLS 653 Acquired Disorders of Language and Cognition (3)
Prerequisite: ASLS 555. This course describes signs and symptoms, evaluation approaches, differential diagnostic criteria, prevention, and management approaches to speech and language disorders resulting from acquired neurological dysfunction across the lifespan.

ASLS 656 Feeding and Swallowing Disorders: Lifespan (2)
Prerequisite: ASLS 555. In-depth study of normal and disordered deglutition in adult and pediatric populations and dysphagia diagnosis and management.

ASLS 657 Motor Speech Disorders: Lifespan (2)
Prerequisite: ASLS 555. Etiologies and characteristics of motor speech disorders. Differential diagnosis and treatment of the disorders will be explored with pediatric and adult populations.

ASLS 658 Assistive Technology for Communication Disorders (3)
Describes assistive technology (AT) applications for individuals with limited/restricted verbal communication. Emphasis on multidisciplinary assessment Selection and use of high and low assistive technologies for communication and learning.

ASLS 661 Articulation and Phonological Disorders in Children (3)
Disorders of speech production in pediatric populations. Biological, cognitive, linguistic, and ethnocultural systems in speech production, contributing/causal factors, theories of acquisition, assessment and treatment issues.

ASLS 664 Fluency Disorders (3)
Characteristics of fluency and fluency disorders; biological, developmental, and environmental factors contributing to fluency disorders; models of and research in fluency disorders; assessment of fluency; and, treatment of fluency disorders.

ASLS 668 Cochlear Implants (3)
Advances in cochlear implant device circuitry, speech processing strategies, candidacy, and rehabilitation are explored. The history and technological progression of cochlear implants are also reviewed.

ASLS 681 Advanced Speech Physiology (3)
Undergraduate anatomy and physiology required. Advanced physiology of the human auditory system, emphasizing electrical potentials; processes of pathophysiology.

ASLS 692 Internship in Medical Settings (2-16)
Prerequisite: Minimum of 100 clock hours of previous supervised clinical experience and/or consent of advisor. Supervised full-time clinical experience in diagnosis/treatment of persons with speech, language and/or hearing disorders in medical settings. S/U graded. Repeatable, maximum of 16 credits.

ASLS 699 Thesis: Communication Disorders (1-6)
Individual original research under the direction of faculty, aimed at acquisition of research skills, use of scientific inquiry and dissemination. S/U graded. Repeatable, no limitations.

ASLS 711 Auditory Physiology (3)
Undergraduate anatomy and physiology required. Advanced physiology of the human auditory system, emphasizing electrical potentials; processes of pathophysiology.

ASLS 712 Amplification I (3)
Advanced study of the theory and use of hearing aids, other amplification devices and assistive listening devices.

ASLS 713 Applied Research in Audiology (1-4)
Prerequisite: ASLS 615, consent of instructor and successful completion of written comprehensive evaluation. Seminar to engage students in a capstone research project. Students will also explore multiple avenues for the presentation of professional quality scholarly projects in audiology. S/U graded. Repeatable, maximum of four credits.

ASLS 720 Supervised Teaching in Audiology (1-4)

ASLS 721 Psychoacoustics (2)
Prerequisite: ASLS 711. Concepts of loudness, adaptation, auditory fatigue, masking and the critical band, pitch perception, localization, temporal order and perceptual organization.

ASLS 723 Amplification II (3)
Prerequisite: ASLS 712. A continuation of the advanced study of the theory, instrumentation, and use of hearing aids and assistive listening devices with emphasis on applied theory and clinical use.

ASLS 724 Differential Diagnosis of Auditory Disorders (3)
Prerequisite: ASLS 711. Theory and process of differential diagnosis of hearing and auditory processing disorders. Focus on behavioral testing, advanced immittance concepts and assessment. Some exposure to other objective measures.
ASLS 731 Auditory Processing Disorders (2)
Theoretical overview, biologic bases, audiologic assessment, and management of adults and children with auditory processing disorders (APD). Emphasis on application of theoretical knowledge to practical clinical audiology methods and techniques.

ASLS 741 Hearing Loss Prevention (3)
The study of noise as it pertains to the auditory system. Physical aspects of noise, instrumentation, measurement and reduction principles, hearing conservation management.

ASLS 742 Advanced Diagnosis of Auditory and Vestibular Disorders (3)
Prerequisite: ASLS 724. Advanced study of auditory and vestibular physiology, otoacoustic emissions, multi-frequency tympanometry, auditory evoked potentials, and electronystagmography.

ASLS 743 Medical Aspects of Audiology (3)
Study of the clinical correlates of hearing impairment including pathogenesis of auditory pathologies, medical/surgical intervention, pharmacology and ototoxicity, radiology and imaging techniques and effects of sedation on electrophysiologic tests.

ASLS 751 Otopharmacology (2)
Prerequisites: ASLS 555 and ASLS 743. Pharmacology and ototoxicity as applied to clinical audiology. Basic mechanisms of pharmacodynamics, pharmacokinetics and pharmacotherapeutics and classes of drugs relative to otologic disorders.

ASLS 772 Audiology Practice Management (2)
Introduction to issues and resources to manage an audiology practice. Topics of business planning, fiscal management, coding and third-party reimbursement, personnel management, marketing and professional communication, and working relationships.

ASLS 774 Professional Issues in Audiology (2)
Overview of professional responsibilities and intra-professional relationships in the hearing health care delivery system. Medical-legal issues, practice guidelines, licensure, intra-personal skills and ethics are addressed.

ASLS 775 Advanced Electro-diagnosis (3)
Prerequisites: ASLS 742. Advanced testing methods of the auditory and vestibular systems.

ASLS 782 Pediatric Audiology (3)
Philosophy, diagnosis, and management of hearing loss in children. Includes auditory development, appropriate hearing assessment techniques for infants and children, interpretation of results, administering follow-up, and effective caregiver counseling.

ASLS 792 Externship in Audiology (3-12)
Prerequisites: 16 credits of internship in any combination of ASLS 592 or ASLS 692, and consent of clinical coordinator. Full-time, broad-based clinical experience in the diagnosis, treatment, management and prevention of hearing loss in a supervised off-campus site. Enrollment is during the 4th year of the Au.D. program, S/U graded. Repeatable, maximum of 27 credits.

ASLS 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. No limitations.

AST 622 Directed Studies (1-4)
Prerequisite: Graduate business standing or consent of instructor. Continuation of BAAC 323 - an activity course; the internship is determined by the internship is determined by the clinical coordinator. S/U graded.

BAAC 525 Contemporary Issues in Auditing Topics (3)
Prerequisite: Graduate business standing or consent of instructor. This course builds on skills obtained in the beginning auditing (assurance) course. The primary goal is to further develop student ability to understand and apply audit planning, evidence gathering, and reporting procedures. Professional communication and research skills are emphasized. Topics vary, depending on issues, trends and developments in the area of study. (S)

BAAC 526 Governmental and Institutional Accounting (3)
Prerequisite: Graduate business standing or consent of instructor. This is an activity course involving the study of accounting processes and procedures used by state and local governmental units and other selected not-for-profit entities. This course addresses advanced topics of current interest in the evolving field of governmental and not-for-profit entities. This course will include a major research project and presentation.

BAAC 528 Contemporary Issues in Accounting Information Systems (3)
Prerequisite: Graduate business standing or consent of instructor. Advanced topics in accounting systems within an enterprise-wide framework including conceptual modeling, database design and implementation, controls, and emerging issues. Topics vary depending on trends and developments in the area.

BAAC 529 Contemporary Issues in Tax (3)
Prerequisite: Graduate business standing or consent of instructor. This course examines current tax issues and integrates them in decision-making, asset prices, and the operational structure of firms. The course will integrate tax with financial accounting by emphasizing the differences and trade-offs between the taxation and financial reporting of a transaction. Topics vary, depending on issues, trends and developments in the area of study.

BAAC 592 Internship in Accounting (1-3)
Prerequisite: Consent of instructor. Graduate business standing. Practical work experience allowing the intern the opportunity to utilize the material learned in accounting courses. Credit for the internship is determined by the coordinator. S/U graded.

BAAC 622 Independent Research Directed Studies (1-3)
Prerequisite: Consent of instructor. Graduate student standing. This course is designed to allow the student to perform and complete a research project as an independent project. The research topic will be mutually agreed with the student and faculty. The course is individually supervised by a graduate faculty member. S/U graded. Repeatable.
BAFN 670 Advanced Financial Management (3)
Prerequisite: Graduates only. Majors only. Business Finance or equivalent. Covers advanced concepts and techniques of financial analysis and valuation. Use of case studies and/or simulation.

MCB — MANAGEMENT

School of Management and Marketing
• Contact (970) 351.2088
• http://mcb.unco.edu/Schools/ManagementAndMarketing

BAMG 554 Managing and Developing People (3)
Prerequisite: Non-business graduates or MAcc students only. This course covers both organizational behavior and human resource topics focused on describing, predicting, and understanding how people behave in organizations. It provides the knowledge underlying management practices, particularly those focused on the management of human resources.

MCB — MARKETING

School of Management and Marketing
• Contact (970) 351.2366
• http://mcb.unco.edu/Schools/ManagementAndMarketing.cfm

BAMK 690 Marketing Management (3)
Prerequisite: Graduates only. BAMK 360 or equivalent. This course involves the analysis of the marketing concepts, functions, and principles involved in planning, implementing, and evaluating the total marketing program of various organizations.

BIO — BIOLOGY

School of Biological Sciences
• Contact (970) 351.2921
• www.unco.edu/nhs/biology

BIO 501 Current Issues in Biology (1-6)
Course varies in content, reviewing current issues of biology. S/U graded. Repeatable, under different subtitles, maximum of six credits.

BIO 502 Biomedicine and Careers (1)
Prerequisite: Must be enrolled in the Master's in Biomedical Science program. This course will assist students in preparing for and entering the medical field. Topics include biomedical ethics, interpersonal skill development, professionalism, the application process, interviewing skills and strategies related to finance continued education.
BIO 528 Developmental Biology (3)  
(3 lecture) Prerequisite: BIO 450 or consent of instructor. Exploration of animal development. Emphasis on the genetic basis of cell organization and identity during embryogenesis and differentiation. Topics include fertilization, gastrulation, axis specification, patterning, organogenesis, stem cells.

BIO 529 Developmental Biology Laboratory (1)  
(3 laboratory) Prerequisite: BIO 528. Classic model organisms such as sea urchin, fruit fly, chick, zebrafish, flat worm, and mouse will be used to observe and manipulate the events of animal development in living organisms.

BIO 530 Plant Systematics (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 111. History of plant taxonomy, phylogenetic systematics, family recognition, and identification of local flora using keys. Native plant collection and field trips required.

BIO 533 General Parasitology (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 101 or BIO 111. Study of the symbiotic relationships of parasitism as exemplified by typical parasites of humans, domesticated and wild animals, stressing life cycles, pathogenesis, systematics and host-parasite relationships.

BIO 534 Mammalogy (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 111. Study of the functional biology, ecology and behaviors of mammals. Laboratory stresses the identification and ecology of Colorado species. Field work required.

BIO 535 Survey of Fishes, Amphibians and Reptiles (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 111. Investigation of the biology of the cold-blooded vertebrates including their evolution, ecology and behavior. Laboratory stresses the identification and biology of Colorado species.

BIO 537 Morphogenesis of Algae and Fungi (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 111. Study structure, morphogenesis and phylogenetic relationships of organisms grouped with algae and fungi. Comparative study to explore multiple kingdom concepts. Ecological, medical and economic aspects of mycology and phycology explored.

BIO 538 Ornithology (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 111. Study of the evolution, general biology, diversity, ecology and behaviors of birds. Laboratory emphasis will be on identification. Field trips required.

BIO 540 Anatomy and Morphogenesis of Plants (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 111 and BIO 330. Study of the evolution of vascular plants as revealed by anatomy and morphology.

BIO 542 Molecular and Cellular Laboratory (2)  
(2 Laboratory) Prerequisites: BIO 220 and concurrent or previous enrollment in either BIO 525 or BIO 550. Study of the theory and techniques currently used to investigate cells and molecules. Development of the laboratory and problem solving skills to successfully conduct experiments.

BIO 544 Comparative Vertebrate Adaptations (4)  
(3 lecture, 3 laboratory) Prerequisites: BIO 345 or consent of instructor. Study of the diverse adaptations of vertebrates, from morphological to molecular levels of organization; includes significant overview of relevant primary literature.

BIO 545 Pathogenic Microbiology (3)  
This lecture course addresses medically-relevant microorganisms and disease. Particular emphasis is placed upon mechanisms of pathogenesis, including microbial virulence factors and immunopathology, epidemiology and public health.

BIO 546 Pathogenic Microbiology Laboratory (1)  
Students will learn techniques for the isolation, propagation and identification of pathogenic microorganisms.

BIO 547 Immunology and Disease (4)  
(4 lecture) Prerequisites: BIO 210 required. BIO 350 and BIO 351 recommended. Study the disease process and immunological resistance to disease with major emphasis on initiation and regulation of adaptive immunity.

BIO 548 Virology (3)  
(3 lecture) Prerequisites: BIO 351. Study of the principles of virology, including biochemistry, structure, taxonomy, transmission, isolation and identification strategies.

BIO 549 Virology Laboratory (1)  
(3 laboratory) Co-requisite: BIO 548. Study and development of laboratory skills in animal virology, including virus propagation, quantification, and detection assays.

BIO 550 Cell Physiology (3)  
(3 lecture) Prerequisites: BIO 220 and CHEM 331; recommended CHEM 481 or CHEM 381. The study of the structural and functional relationships among biological macromolecules, cell organelles, and cell processes.

BIO 552 Mammalian Physiology I (3)  
(3 lecture) Prerequisites: BIO 341 or BIO 345 and CHEM 481. In-depth examination of the physiological function of various organ systems of mammals.

BIO 553 Mammalian Physiology II (3)  
(3 lecture) Prerequisites: BIO 341 or BIO 345 and CHEM 481. Continuation of BIO 552. In-depth examination of the physiological function of various organ systems of mammals.

BIO 554 General Plant Physiology (4)  
(3 lecture, 3 laboratory) Prerequisites: BIO 111 and CHEM 331. Study physiological factors influencing the chemical and structural composition of plant absorption and utilization of water and minerals; photosynthesis, translocation, respiration, nitrogen metabolism and growth and development.

BIO 555 Reproductive and Developmental Biology (3)  
Prerequisites: BIO 110 and CHEM 331, recommend CHEM 481. Examination of the anatomy, physiology and mechanisms of reproduction and development with an emphasis on mammals.

BIO 556 Current Topics in Biomedical Research (2)  
Prerequisites: BIO 110 and CHEM 331; recommend BIO 450. Examine current biomedical research, molecular, cellular, and physiological virology of human and model systems. Mechanisms regulating normal function, effects of toxicants and drugs, and the role of genetic mutations. Repeatable, no limitations.

BIO 557 Mammalian Physiology I Laboratory (1)  
(3 laboratory) Co-requisite: BIO 552. Laboratory experimentation, small group discussion and active learning exercises to complement BIO 552.

BIO 558 Mammalian Physiology II Laboratory (1)  
(3 laboratory) Co-requisite: BIO 553. Laboratory experimentation, small group discussion and active learning exercises to complement BIO 553.

BIO 559 Plant Reproductive Growth and Development (3)  
Prerequisite: BIO 354. Advanced study of the genetic, physiological and environmental factors that influence reproductive development in flowering plants.

BIO 560 Behavioral Ecology (4)  
(3 lecture, 3 laboratory) Prerequisite: BIO 362 or equivalent. Comprehensive review of population dynamics, behavioral ecology and zoogeography. Review of current literature an integral part of course.

BIO 561 Plant Ecology (3)  
(3 lecture) Prerequisites: BIO 110 and BIO 360. Examination of plant communities, effects of environmental factors on plants, as well as community measurement and evaluation, modeling techniques, energy flow through ecosystems, and community dynamics.

BIO 562 Conservation Biology (3)  
(3 lecture) Prerequisite: BIO 111. Examination of the fundamental principles of conservation biology (biodiversity, habitat degradation, extinction, restoration, planning) with discussion of current topics (climate change, conservation genetics, landscape vs. ecosystem conservation, sustainable development).
BIO 563 Animal Communication (4)  
(3 lecture, 3 laboratory) Prerequisites: BIO 362, an Animal Behavior course from another university, or consent of the instructor. Students should have a background in animal behavior, experimental design and statistics. The course covers animal communication theory, modalities, signal function, physiological and anatomical constraints, and evolutionary aspects regarding animal communication.

BIO 564 Plant Ecology Lab (1)  
(3 laboratory) Prerequisites: BIO 110, BIO 360 concurrently. Laboratory to accompany BIO 561 plant ecology. Examines methods of plant ecology including monitoring community structure and function, population dynamical, physiological tolerance, and data analysis. The lab will include both field and laboratory experiments.

BIO 565 Current Topics in Ecology and Evolutionary Research (2)  
(2 lecture) Prerequisites: BIO 111, BIO 360 and BIO 465. Examine current topics in ecology and evolutionary biology research. Focus on speciation, microevolution, range shifts, species interactions, and ecosystems. Topics will include both applied and basic studies. Repeatable, maximum of 6 credits.

BIO 566 Animal Physiological Ecology (3)  
(3 lecture) Prerequisites: BIO 110 and BIO 360. Study of animal function and how environmental conditions influence the physiology of animals. Emphasis will be on vertebrate systems but invertebrates will be included.

BIO 567 Animal Physiological Ecology Laboratory (1)  
(3 laboratory) Prerequisites: BIO 110 and BIO 360, BIO 566 concurrently. Laboratory to accompany BIO 566 - animal physiological ecology. Includes instruction on the theory behind and use of physiological equipment/instruments and an examination of how environmental conditions affect animal function.

BIO 568 Disturbance Ecology (3)  
(3 lecture) Prerequisites: BIO 110 and BIO 360. Study of natural and anthropogenic disturbances (fire, flood, insect outbreaks) effects on populations, communities and ecosystem function.

BIO 569 Conceptual Issues in Evolution (2)  
Prerequisite: BIO 465 or consent of instructor. Study of the guiding principles in modern evolutionary biology. Focus on concepts of fitness, selection, adaptation, form and function, concerted evolution and the nature of biological variation.

BIO 570 Coevolution in Ecological Systems (3)  
(3 lecture) Prerequisites: BIO 360, BIO 465 or consent of instructor. Survey of contemporary primary literature on coevolution and ecology, including symbiosis, mutualism, competition, pollination, mimicry, parasitism, seed dispersal, etc.

BIO 572 Species and Speciation (3)  

BIO 576 Pharmacology (3)  
Prerequisite: BIO 350, BIO 352, BIO 552 or ASLS 573. A mechanistic study of pharmacokinetics (absorption, distribution, metabolism and excretion of drugs) and pharmacodynamics (drug actions and interactions). Examples of important bioactive chemicals will be discussed.

BIO 580 Mammalian Endocrinology (3)  
(3 lecture) Prerequisites: BIO 210 and BIO 350. Survey of endocrinology including neuroendocrine physiology, mechanisms of action, regulation of homeostasis, endocrine dysfunction, quantifying hormones.

BIO 581 Neurobiology (3)  
(3 lecture) Prerequisite: BIO 350 or consent of instructor. Examination of the development, anatomy, and physiology of the nervous system, with an emphasis on humans. Topics will include mechanisms mediating behavior and major brain diseases.

BIO 582 Cancer Biology (3)  
(3 lecture) Prerequisite: BIO 220. Study the principles of cancer biology including the mechanisms involved in its progression; the roles of DNA damage, heredity, and the environment; and treatment and prevention.

BIO 585 Topics in Field Biology (1-10)  
After preparatory work, study biology in the field on a state, national or international basis.

BIO 591 Biology Roundtable (1)  
An intensive facilitated discussion on current and cutting-edge topics in the biological sciences taken from peer-reviewed literature and input from visiting scholars. S/U graded. Repeatable, no limitations.

BIO 592 Internship in Biological Sciences (1-3)  
Consent of instructor required. On-the-job experience in professional areas under the supervision of an area specialist. S/U graded.

BIO 594 Foundations of Biological Research (2)  
Required for all incoming master's students in biological sciences. Introduction to the scientific method and experimental design, written and oral presentation skills, grantsmanship, ethics and responsible scientific conduct.

BIO 595 Special Topics in Biology (1-6)  
Study of any biological topic at an advanced level. Repeatable, maximum of six credits.

BIO 622 Directed Studies (1-4)  
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 hour credit per credit hour.) Repeatable under different subtitles, maximum concurrent enrollment is two times.

BIO 691 Seminar in Biological Sciences (1)  
(1 lecture) Invited speakers will present research topics in content biology and biology education. Graduate students will also present their research proposals and final defenses of their theses or dissertations. Repeatable, no limitations.

BIO 697 Graduate Research (1-6)  
Consent of instructor. Qualified graduate students spend a minimum of 38 clock hours per semester hour on a research problem. Before credit is given, a well-written report must be submitted to the instructor.

BIO 699 Thesis (1-6)  
S/U graded. Repeatable, no limitations.

BIO 792 Doctoral Supervised Teaching (1-6)  
Experience supervised college level biological sciences teaching. Develop course outlines and effective teaching techniques. Students must have completed oral and written comprehensive exams prior to being eligible for this course.

BIO 797 Doctoral Proposal Research (1-4)  
Four credits required of all doctoral students before admission to candidacy. S/U graded.

BIO 799 Doctoral Dissertation (1-12)  
Twelve credits required of all doctoral candidates. S/U graded.

CH — COMMUNITY HEALTH

School of Human Sciences  
• Contact (970) 351.2755  
• www.unco.edu/nhs/publichealth

CH 303 Health Education in the Elementary School (1)  
Prerequisite: Provisional admission to PTEP or EDFE 110. Examines the foundations in coordinated school health programs and teaches skills in integrating health into elementary schools.

CH 500 Stress Management (3)  
A holistic approach to stress management, with cognitive and theoretical knowledge and stress reduction techniques to prevent or alleviate physical symptoms of stress.

CH 305 Health Communications and the Media (3)  
Focuses on the design, production, evaluation and acquisition of appropriate media and materials for health education/promotion programs.
CH 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

CH 509 Seminar in Health Behavior (3)
Review theories of behavior and behavior change as they relate to current health issues. Health behavior change models will be examined and applied. Repeatable, no limitations.

CH 510 International Health: Cross Cultural Comparisons (3)
This class explores the multi-cultural aspects of health and international comparisons of various health indicators. Students will examine specific health problems, and the nature of health care delivery worldwide.

CH 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

CH 515 Grant Writing for Health Professionals (3)
Overview of grant proposal development process. Develop skills in identifying funding needs and sources, methodology, management plans, budgeting and evaluation. Collaboration with local agencies and faculty.

CH 520 Foundations in Public Health (2)
Examines historical and conceptual bases of public health, key issues and problems faced by the public health system, and tools available for protection and enhancement of the public’s health.

CH 530 Seminar in Health Promotion Strategies (3)
Prerequisites: CH 509 or consent of instructor. Examines the effectiveness of a wide range of strategies used in health promotion/disease prevention programs. Current literature/programs are presented and reviewed.

CH 540 Principles of Health Program Management (3)
Prepares students to assume a supervisory role in the management of health and human services programs. Course covers planning, decision-making, organization, budgeting, marketing, human resource management, leadership.

CH 550 Environmental Health (3)
Investigate and discuss the relationships of environmental health problems to human health and welfare. Include sources of these problems, their recognition and control and current research studies.

CH 570 Field School (3-6)
Consent of instructor. Experience in rural health and human services related to working with marginalized populations. S/U graded. Repeatable. Field trip fee required.

CH 610 Program Planning and Evaluation (3)
Prerequisite: CH 530 or consent of instructor. Theories and practices of program planning and evaluation including needs assessment, planning approaches, selection of strategies, data collection and analysis, evaluation design, program implementation and utilization of evaluation data.

CH 620 Epidemiology (3)
Prerequisite: SRM 617. Epidemiological principles analyzed with an emphasis on selected topical issues, infectious and chronic/degenerative diseases, research and methodology. Practical applications of statistical and epidemiological methods.

CH 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

CH 625 Public Health Administration and Policy (3)
Analyze the organization and administration of public health agencies at national, state and local levels. Major public health problems, including administrative and policy decisions regarding their resolution, will be included.

CH 686 MPH Masters Project (2)
Prerequisite: CH 693 (or concurrent) and consent of instructor. Independent project in which student demonstrates public health competencies. Includes public presentation of capstone paper.

CH 692 Graduate Internship (3-6)
Prerequisites: CH 610 and consent of advisor. Supervised experience at a health agency that allows the student to put into practice knowledge and skills learned in the classroom. S/U graded. Repeatable, maximum of six credits.

CH 693 MPH Practicum (2)
Prerequisites: CH 520, CH 610 (or concurrent) and consent of instructor. MPH students must successfully demonstrate competencies and integrate knowledge. Through this practicum, theory and skills will be applied in a public health setting.

CH 699 Thesis (1-6)
Optional for Master of Public Health candidates in Health Education. Repeatable, no limitations.

CH 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 531</td>
<td>Physical Chemistry I (4)</td>
<td>Prerequisites: CHEM 332, MATH 233, PHYS 241. Co-requisites, CHEM 321. Chemical kinetics, quantum theory of atoms and molecules and statistical thermodynamics.</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 552</td>
<td>Physical Chemistry II (4)</td>
<td>Prerequisite: CHEM 551. The properties of matter, thermodynamics, thermochemistry and kinetic molecular theory.</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 556</td>
<td>Physical Chemistry of Atomic and Microscopic Systems (3)</td>
<td>Prerequisites: CHEM 451 and CHEM 452. This course will examine the details of atomic and molecular structure, energetics, and dynamics.</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 560</td>
<td>Environmental Chemistry (2)</td>
<td>(1.5 lecture, .5 laboratory) Prerequisite: CHEM 331. The effect of chemicals on the environment.</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 581</td>
<td>General Biochemistry I (4)</td>
<td>Prerequisite: CHEM 332 or equivalent. Chemistry of biologically important compounds (proteins, nucleic acids, carbohydrates and lipids), emphasizing structure and function, methods of isolation, identification and characterization, kinetics and mechanisms of enzyme catalysis.</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 582</td>
<td>General Biochemistry II (4)</td>
<td>Prerequisites: CHEM 581. A continuation of CHEM 581. Bioenergetics, electron transport systems, classification of carbohydrates, lipids, nucleotides and amino acids.</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 587</td>
<td>Toxicology (3)</td>
<td>Prerequisites: CHEM 482 or equivalent. A descriptive examination of the toxic effects of environmental substances on living systems.</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 590</td>
<td>Advanced Topics in Chemistry (3)</td>
<td>Discussion of a topic in chemistry at the graduate level: e.g. polymers, drug metabolism, and molecular reaction dynamics. Repeatable, maximum of 12 credits, under different subtitles.</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 600</td>
<td>Seminar in Chemistry (1)</td>
<td>Oral report and discussion on an advanced topic in chemistry or chemical education. Repeatable, may be taken three times.</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 622</td>
<td>Directed Studies (1-3)</td>
<td>Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.</td>
<td>1-3</td>
</tr>
<tr>
<td>CHEM 682</td>
<td>Problems in Teaching Chemistry (3)</td>
<td>Problems encountered in teaching chemistry and approaches to their resolutions will be considered. The formal nature of concepts, management of laboratories, safety, demonstrations are illustrative of areas of discussion.</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 693</td>
<td>Chemical Research (1-10)</td>
<td>Develop, complete, and defend master's level research project in chemistry. S/U graded. Repeatable, maximum of ten credits.</td>
<td>1-10</td>
</tr>
<tr>
<td>CHEM 695</td>
<td>Thesis Proposal (1)</td>
<td>The student will develop a committee approved research proposal based on current literature.</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 699</td>
<td>Thesis (1-9)</td>
<td>Required of candidates in M.S. Research emphasis program. Repeatable, maximum of 9 credits.</td>
<td>1-9</td>
</tr>
<tr>
<td>CHEM 735</td>
<td>Supervised Practicum in College Teaching (1-6)</td>
<td>Supervised practice in college teaching for doctoral candidates with observation used as a basis for analysis of learning experiences. Repeatable, maximum of six credits.</td>
<td>1-6</td>
</tr>
<tr>
<td>CHEM 793</td>
<td>Doctoral Research Practicum-Chemistry (1-4)</td>
<td>Consent of advisor. Provides experience in the development and implementation of research techniques, the development of experimental design and the analysis of research data. S/U graded. Repeatable, maximum of 16 credits.</td>
<td>1-4</td>
</tr>
<tr>
<td>CHEM 797</td>
<td>Doctoral Research Proposal-Chemistry (1-4)</td>
<td>Required of all doctoral students. Students may register for this course (1-4 hours) in any semester, but must earn 4 hours of credit in partial fulfillment of requirements before admission to candidacy. S/U graded. Repeatable, maximum of four credits.</td>
<td>1-4</td>
</tr>
<tr>
<td>CHEM 799</td>
<td>Dissertation-Chemistry (1-12)</td>
<td>Required of all doctoral candidates. See Ph.D. in Chemical Education - Minimum requirements for the major in the Graduate School section of this Catalog. Repeatable, maximum of 12 credits.</td>
<td>1-12</td>
</tr>
<tr>
<td>COMM</td>
<td>Communication Studies</td>
<td>Repeatable, under different subtitles.</td>
<td>3</td>
</tr>
</tbody>
</table>

**COMM—Communication Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>COMM 502</td>
<td>Teaching College COMM Courses (1)</td>
<td>Required of all graduate teaching assistantships in COMM. S/U graded. Repeatable, maximum of three credits.</td>
</tr>
<tr>
<td>COMM 504</td>
<td>Rhetorical Theory (3)</td>
<td>Systematic review of the major contributions of rhetorical theorists for their probable impact on communication.</td>
</tr>
<tr>
<td>COMM 512</td>
<td>Persuasion (3)</td>
<td>Investigate the implications of contemporary research and theory in the area of persuasion and attitude change.</td>
</tr>
<tr>
<td>COMM 514</td>
<td>Interpersonal Communication (3)</td>
<td>An overview of current theoretical perspectives on interpersonal communication and representative supportive research.</td>
</tr>
</tbody>
</table>

**COMM 515**

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>COMM 515</td>
<td>Group Communication (3)</td>
<td>Examine theories of group process, major group process research findings and how the principles derived from communication literature can be applied to small groups.</td>
</tr>
<tr>
<td>COMM 517</td>
<td>Organizational Communication (3)</td>
<td>Examine theories of organizing, research findings on organizational communication and how the principles derived from communication impact institutions.</td>
</tr>
<tr>
<td>COMM 531</td>
<td>Communication and Leadership (3)</td>
<td>Examine theories of leadership, major leadership research findings and various leadership methods. Consider how the principles derived from leadership literature can be applied to small group and organizational settings.</td>
</tr>
<tr>
<td>COMM 541</td>
<td>Courtroom Communication (3)</td>
<td>Investigate the relationship between communication and the law and legal argumentation and persuasion within courtroom advocacy. Analyze communication within the legal profession.</td>
</tr>
<tr>
<td>COMM 542</td>
<td>Seminar in Political Communication (3)</td>
<td>Graduate students only. Analysis and criticism of political discourse using theories and methods from the discipline of communication.</td>
</tr>
<tr>
<td>COMM 553</td>
<td>Professional Speaking (3)</td>
<td>Prerequisites: COMM 100, COMM 103. Theory and practice of advanced speech composition, presentational decisions and techniques in a variety of contexts.</td>
</tr>
<tr>
<td>COMM 561</td>
<td>Seminar in Communication (1-3)</td>
<td>Investigate issues of current concern, for COMM professionals with subject varied according to faculty expertise. Repeatable, under different subtitles.</td>
</tr>
<tr>
<td>COMM 592</td>
<td>Internship (1-3)</td>
<td>Receive professional communicative experience. Submit a proposal to the Internship Coordinator six weeks before registration. Hours must be accumulated to 30 basic hours in communication graduate program. Repeatable, maximum of six credits.</td>
</tr>
<tr>
<td>COMM 600</td>
<td>Graduate Study in Communication (3)</td>
<td>Orientation to graduate study with emphasis on learning to conduct literature reviews using the major journals of the communication discipline. Introduction to research using quantitative, qualitative and rhetorical approaches.</td>
</tr>
<tr>
<td>COMM 601</td>
<td>Qualitative Methods in Communication Research (3)</td>
<td>Orientation to the methods of qualitative research that are most frequently used in the communication discipline. Practical experience in data gathering and analysis procedures.</td>
</tr>
</tbody>
</table>
COMM 602 Quantitative Methods in Communication Research (3)
Orientation to the methods of quantitative research that are most frequently used in the communication discipline. Practical experience in data gathering and analysis procedures.

COMM 603 Communication Theory (3)
The study of current theories of human communication and the process of theory building.

COMM 605 Rhetorical Criticism (3)
Systematic review of the major contributions of rhetorical criticism theorists for their probable impact on communication.

COMM 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

COMM 641 Communication and Technology (3)
This course is designed to explore issues surrounding the emergence of new technologies and the evolution of the mediated communication process.

COMM 699 Thesis (1-6)
Optional for Master of Arts candidates on recommendation of major advisor. S/U graded. Repeatable, no limitations.

CRJ — CRIMINAL JUSTICE
Department of Criminal Justice
- Contact (970) 351.2186
- www.unco.edu/criminaljustice

CRJ 508 Workshop
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

CRJ 523 Problem Oriented Policing and Problem Solving for the 21st Century (3)
An in-depth examination of the relationship between law enforcement and social problems. Techniques for identifying and analyzing social problems from a law enforcement perspective.

CRJ 531 Seminar in Law & Society (3)
Prerequisite CRJ 560. Views the legal system as a social institution by considering the origins of law, law in action, popular media portrayal of law, and the relationship between law and social change.

CRJ 532 Problem Solving Courts (3)
A critical evaluation of court innovations linked to the larger problem-solving justice philosophy, which emphasizes enhanced information and information sharing, community engagement, collaboration, individualized justice, offender accountability, and outcomes.

CRJ 550 Organization and Management of Criminal Justice (3)
Prerequisites: CRJ 531. Explores the spectrum of criminal justice administration: law enforcement, corrections, and the courts. Topics include financial administration, employee supervision and discipline, civil liabilities, labor relations, professional ethics, and emerging technologies.

CRJ 560 Seminar in Criminology and Crime Policy (3)
Co-requisite: LIB 550. Advanced study of criminological theories using a broad interdisciplinary perspective. Explain and critique current crime control and crime prevention strategies as they relate to theory, policy, and practice.

CRJ 562 Environmental Criminology (3)
Departing from the sociological or psychological explanations for criminal behavior, this course focuses on the opportunities surrounding crime and identifies ways to constrain or eliminate the mechanisms for crime.

CRJ 565 Transnational Crime (3)
Overview of transnational crimes with specific examples such as sea piracy, human trafficking, and terrorism. Addresses problems in defining these crimes, understanding their occurrence, and determining ways to combat them.

CRJ 580 Advanced Research Methods for Criminal Justice (3)
Prerequisite: CRJ 531. Scientific method of inquiry applied to the study of crime. Emphasis on questions inherent in the study of contemporary issues in criminal justice programs and policies.

CRJ 582 Statistics for Criminal Justice Research (3)
Prerequisite: CRJ 580. Application of statistical methods for identifying and classifying data; determine appropriate statistical methods for analyzing specific data; know why procedures give the results they do, and interpret output of statistical analyses.

CRJ 610 Critical Issues in Early Childhood (3)
Examine those components of effective classroom management procedures with children in groups. Topics include theoretical perspectives, rules and organization, pro-social behavior and effective pedagogical decisions.

CRJ 611 Practicum (1-3)
Supervised professional activity in early childhood education, approximately two hours per day. A well-written paper must be filed before credit is given. Repeatable, maximum of six credits.

CRJ 620 Educational Applications of Child Development in Early Childhood Classrooms (3)
Study of applications of child development theories and research. Acquisition of knowledge and skills to analyze classroom practice and to apply theory and research to best practice.

CRJ 660 Critical Issues in Early Childhood (3)
Investigating trends and issues concerning the young child stressing curriculum, sound education policies, especially the need for cultural diversity, as well as issues of compelling contemporary significance.

CRJ 670 Curriculum and Instruction in Early Childhood and Primary Education (3)
Examine components of effective instruction in early childhood and primary levels, including theoretical bases, environment, organization and management, teacher’s role, curriculum content and evaluation. Relevant research is investigated.

EDEC 675 Play and Psychosocial Development in Early Childhood (3)
Focus on theories of play in socio-drama, therapy and cognition. Motor, emotional and psychosocial development explored. Play of successive development phases and individual meaning for each child emphasized.

EDEC 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.
EDEL — Elementary Education

School of Teacher Education
- Contact (970) 351.2908
- www.unco.edu/cebs/teached

EDEL 513 Professional Renewal (1-3)  
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

EDEL 520 Effective Instruction in Elementary School Mathematics (3)  
3.00 GPA required. A comprehensive examination of issues, trends and practices in elementary school mathematics programs, including instruction, strategies, planning, development, materials and evaluation. Emphasis on promoting problem solving in school mathematics curriculum.

EDEL 525 Integrated Methods: Visual Arts, Music and Physical Education (1-3)  
3.00 GPA required. Integration of visual art, music and physical education. Students learn discipline specific instruction techniques, strategies, activities and content knowledge to effectively integrate these areas across the curriculum.

EDEL 544 Elementary Student Teaching and Capstone Seminar (8)  
Prerequisites: Full admittance to PTEP required. Meets student teaching requirement for certification. S/U graded.

EDEL 550 Effective Instruction in Elementary School Social Studies (3)  
3.00 GPA Required. In-depth consideration of issues, problems and practices in the elementary social studies classroom, including instructional strategies planning, materials and evaluation. Emphasis on thinking in a pluralistic democratic society.

EDEL 601 Practicum and Capstone Seminar in Elementary Education (3)  
Provides opportunities for students to collaborate in the completion of a teacher research project, revise the curriculum development project, finalize the professional portfolio, prepare for and take the comprehensive examination.

EDEL 602 Elementary School Practicum (2)  
Prerequisites: EDFE 125 and 3.00 GPA required. This practicum immerses students in the elementary school classroom. Opportunities for teacher candidates to inquire, analyze and reflect on classroom routines and practices.

EDEL 612 Elementary School Curriculum (3)  
A review and analysis of competing conceptualizations of the elementary-school curriculum. Teachers develop, implement, and evaluate curriculum in elementary classrooms. Current topics, trends and issues in curriculum are explored.

EDEL 613 Integrated Curriculum (3)  
Theory, design, development, implementation and evaluation of integrated curriculum. Students develop interdisciplinary units of study and learn active learning strategies and techniques consistent with an effective rationale for integrated curriculum.

EDEL 619 Pluralism in Education (3)  
Assists student in recognizing need for creating processes that enable children, educators and others to support and design a culturally and socially diverse curriculum.

EDEL 620 Research Applications for Instruction in Mathematics, K-9 (3)  
Consider in detail the problems concerned with selection of what to teach, grade placement of content, methods and materials for teaching and means of evaluating achievement in mathematics.

EDEL 622 Directed Studies (1-3)  
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

EDEL 640 Instruction in Language Arts and Literacy in the Elementary School (3)  
Teachers develop their abilities as readers, writers and thinkers as they examine current research and practice in language arts and literacy instruction.

EDEL 645 Assessment of Language Arts and Literacy in the Elementary School (3)  
Prerequisite: EDEL 640 and teaching experience. A consideration of problems, trends, and issues in the assessment of language arts and literacy. Focus on reading and writing as integrated processes.

EDEL 650 Research Application for Instruction in Social Studies, K-9 (3)  
Designed for experienced teachers, course focuses on strategies for improving social studies curriculum and instructions. Studies trends, issues and research affecting educating children for citizenship in a pluralistic/democratic society.

EDEL 725 Seminar in Elementary School Mathematics (2)  
Prerequisite: EDEL 520 or EDEL 620. Covers important problems in the teaching and supervision of mathematics in the elementary school. Content may vary from year to year according to needs of participants. S/U graded.

EDEL 745 Seminar in Elementary School English (2)  
Advanced study and original research in teaching English/language arts in the elementary and middle school. S/U graded.

EDEL 755 Seminar in Elementary Education Social Studies (2)  
Prerequisite: EDEL 550 or EDEL 650. A consideration of the research applicable to crucial issues in elementary social studies including the child's development of key concepts, values, morals and skills; curriculum development and evaluation. S/U graded.

EDEL 790 Supervised Practicum in College Teaching (3)  
Experience in observation and supervised practice of college teaching for doctoral candidates planning to teach at college level. Observations and experiences used as basis for analysis of learning experiences. S/U graded. Repeatable, maximum of six credits.

EDEL 797 Doctoral Proposal Research (1-4)  
Required of all doctoral students. Students must earn 4 hours of credit for doctoral dissertation research proposal in partial fulfillment of requirements for doctoral degree before admission to candidacy. S/U graded. Repeatable, maximum of four credits.

EDEL 799 Doctoral Dissertation (1-12)  
Required of all doctoral candidates. Students must earn 12 hours of credit for the dissertation in partial fulfillment of requirements for the doctoral degree. S/U graded. Repeatable, no limitations.

EDEL 999 Graduate School Continuous Registration (1)  
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

EDF — Foundations of Education

School of Teacher Education
- Contact (970) 351.2908
- www.unco.edu/cebs/teached

EDF 500 Conceptions of Schooling (3)  
Co-requisite: EDFE 125. Investigation of social contributions of schools. Determination of what the public expects from local schools, assessing how accurately present systems meet public's expectations and individual implications for teaching.

EDF 508 Workshop (1-3)  
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.
EDF 513 Professional Renewal (1-3)  
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

EDF 601 Discourse Analysis in Language and Literacy Research (3)  
Prerequisites: SRM 680. An introduction to the theory and methods of microethnographic discourse analysis approaches to the study of language and literacy events. Students will be encouraged to pursue their individual research interests in work for the course.

EDF 610 Teacher Research (3)  
Provides teachers with an analytic framework for understanding different types of teacher research as well as strategies and techniques for conducting research in K-12 schools.

EDF 619 Pluralism in Education (3)  
Assists student in recognizing need for creating processes that enable children, educators and others to support and design a culturally and socially diverse curriculum.

EDF 622 Directed Studies (1-3)  
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

EDF 640 Psychological Foundations of Education (3)  
Exploration and analysis of possible range of assumptions about nature of human activity (thinking, behaving, feeling) and implications of those assumptions relative to educational enterprise.

EDF 662 Foundations of Curriculum Development & Instructional Practice (3)  
Examines nature and scope of curriculum planning, instructional design, decision-making, and implementation. Delivery and instruction of a curriculum, the process for changing curriculum are investigated.

EDF 664 Current Issues in Instruction and Assessment Practices (3)  
Examine current issues in instructional and assessment practices, from social and historical and political perspectives; focus on the research literature on instruction and assessment practices.

EDF 683 Philosophical Foundations of Education (3)  
Examine leading contemporary and classical philosophical systems and how they culminate in practical educational goals, systems of justification and practices. Includes the study of educational aims and values.

EDF 670 Introduction of Research Literature (3)  
Examines roots of educational research, its evolution in context of educational reform. Conceptual base in the interpretation, application, and dissemination of current and emerging literature.

EDF 700 Implementation & Evaluation of Curriculum (3)  
Analysis of major concepts as related to the implementation and evaluation of curriculum. Covers models of curriculum design and strategies for implementing and evaluating curriculum.

EDF 701 Doctoral Seminar (1)  
Focus of the seminar changes. It helps doctoral students to identify research methods, dissertation topic and design, conceptual framework, hypothesis, research and writing strategies. Repeatable.

EDF 773 Literacy as Social Practice (3)  
Exploration of concepts of literacy as social construction; includes aspects of influence on status, power, and mobility within society.

EDF 775 History of Education Reform and Change (3)  
Analysis of research on the history of American education with respect to implications for contemporary educational curriculum, reform, and innovation.

EDF 777 Social Justice in Education Reform (3)  
Analysis of research and social justice leadership and reform in schools (past, present, future). Critical reflection of teaching and learning that define, support, or hinder social justice in education.

EDF 778 Social Theories of Learning and Organizational Change (3)  
Examination of individual and collective learning as developmental transformation within and across social organizations such as schools. Explores concepts of identity, power, meaning, boundaries and interaction between individuals and systems.

EDF 781 Perspectives on Curriculum (3)  
Exploration of curriculum theory and practice. The course addresses current orientations and applications of curriculum and its community of scholars and practitioners.

EDF 787 Technology, Innovation and Education (3)  
Analysis of theory and practice-based research relevant to thoughtful design, implementation, and assessment of educational media and technology initiatives.

EDF 790 Supervised Practicum in Professional Teacher Preparation (3)  
Prerequisites: Teaching experience at the appropriate school level (elementary or secondary), student must have approval from either the Elementary or Secondary Program Coordinator. Course is designed for the doctoral student who elects to teach in teacher preparation programs.

EDF 797 Doctoral Proposal Research (1-4)  
Candidate must earn a minimum of 4 credit hours for doctoral proposal research in partial fulfillment of the requirements for the degree.

EDF 799 Doctoral Dissertation (1-12)  
Candidate must earn a minimum of 12 credit hours for the dissertation in partial fulfillment of the requirements for the degree.
EDLD — EDUCATION OF LINGUISTICALLY DIFFERENT

School of Teacher Education
- Contact (970) 351.2908
- www.unco.edu/cebs/teached

EDLD 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

EDLD 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable under different subtitles.

EDLD 592 Second Language Acquisition Theory (3)
Designed for educators who are preparing to teach or who are already teaching. English Language Learners. Introduces students to the existing body of theory related to second language acquisition.

EDLD 593 Language, School and Society (3)
Designed for educators who are preparing to teach, or are already teaching, English Language Learners. Primary focus is on the interactions between society, language, and institutions of schooling.

EDLD 594 Foundations of Language and Linguistics for ESL/Bilingual Educators (3)
Provides teachers of English language learners with an introduction to linguistics and its application in the ESL classroom: linguistic concepts about oral and written language use and development.

EDLD 600 Literacy and Content Instruction in Spanish Bilingual Classrooms (3)
Prerequisite: Fluency in Spanish as indicated by the Oral Proficiency Exam. Designed for educators who are preparing to teach, or are already teaching Spanish speaking children. Emphasis is on literacy strategies and content area knowledge used in the bilingual classroom.

EDLD 602 Teaching Linguistically Diverse Learners (3)
This course will introduce future teachers to the theoretical, practical, and legal aspects of the education of students who speak English as a second language.

EDLD 603 Methods and Assessment for ESL and Bilingual Education (3)
Assessments, procedures, and teaching methods appropriate when working with linguistically diverse students.

EDLD 604 Field Experience in TESOL and Bilingual Education (3)
Prerequisites: EDL 619, EDLD 602 and EDLD 603. Provides teachers with the opportunity to observe and participate in instructional strategies for English Language Learners.

EDLD 605 Seminar in Bilingual Education and TESOL I (3)
Prerequisites: SRM 600 or equivalent and at least six completed graduate credits in Bilingual/ESL. Study contemporary issues, research and practice in bilingual education and English as a second language.

EDLD 606 Linguistically Diverse Students and the U.S. Educational System (3)
Introduction to the history of education of linguistically diverse groups in the United States. Study of educational practices that affect their success and influences of language on schooling and culture.

EDLD 607 Seminar in Bilingual Education and TESOL II (3)
Capstone experience for the MAT: LDE Emphasis. Integrates content, pedagogy, and research methods knowledge with classroom teaching and other work-related experiences. Students complete a culminating experience project.

EDLD 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

EDLD 746 Sociocultural Theories and Linguistically Diverse Education (3)
Introduction to sociocultural theories of learning and development and their relevance for understanding and supporting effective teaching and learning among culturally and linguistically diverse students.

EDLD 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.
EDRD 615 Topical Seminar in Reading/Literacy (3)
Advanced study and inquiry in Reading/Literacy education. Address landmark research, analysis and synthesis of past and present trends and issues, and scholarly pursuit of scholarly topic. Repeatable, may be taken four times under different subtitles.

EDRD 617 Evaluation and Improvements of Literacy Teaching and Learning (4)
Prerequisites: EDRD 612 and EDRD 620 or equivalent for Reading Education majors. Develop an understanding of the educationally disabled reader and writer in elementary and secondary school. Explore diagnostic and instructional strategies. Required tutoring experiences.

EDRD 620 Reading in the Middle and Secondary Schools (3)
Introduction to reading skills and reading requirements in developmental reading and subject-matter classes in the middle and secondary school. Examine instructional strategies and evaluation procedures as reflected by research.

EDRD 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

EDRD 642 Teaching the Writing Process in Schools (3)
Assist classroom teachers with children's writing process. Emphasis on: writing process; encouragement of process development; children's growth in writing process; and, recording, assessing, and reporting student progress.

EDRD 645 Reading Research (3)
Study research procedures and their application to education. Critique reading research and reading programs and practices. Develop and present a research project in the area of reading/literacy.

EDRD 670 Directing a School-Wide Reading/Literacy Program (3)
Seminar course intended to prepare reading teachers, specialists, coordinators and administrators for directing textbook adoption, curriculum development and issues, staff development, evaluation and supervision of reading/writing programs.

EDRD 692 Clinical Practicum in Literacy Coaching (4)
Prerequisites: EDRD 617. Supervised clinical instruction of elementary/middle/secondary school disabled readers. Continued professional development, in the areas of collegial communications, reflective coaching, and leadership capacity. May be completed at each level. Repeatable for a maximum of 12 hrs.

EDRD 693 Capstone Reading Seminar (1)
Prerequisites: Register final semester of coursework for MA in Reading. Explores major trends in reading education; synthesis and assimilation of information gleaned from all courses in the MA in Reading Program. S/U graded.

EDRD 699 Thesis (1-6)

EDRD 745 Topical Seminar in Reading/Literacy (2-4)
Advanced study and inquiry, in Reading/Literacy education. Address landmark research, analysis and synthesis of past and present trends and issues, and scholarly pursuit of scholarly topic. Repeatable, may be taken four times, under different subtitles.

EDRD 750 The Contributing Professional in Reading (3)
Designed for Reading/Literacy professional completing doctorate. Encourages and examines professional contributions encompassed within the reading/literacy field including scholarly activities, organizational memberships, and service roles.

EDRD 795 Supervised Practicum in College Teaching (3)
Experiences in observation and supervised practice in college teaching to be used as basis for analysis of learning experiences. S/U graded. Repeatable, maximum of nine credits.

EDRD 797 Doctoral Proposal Research (1-4)
Required of all doctoral students. Students must earn 4 hours of credit for doctoral dissertation research proposal in partial fulfillment of requirements for doctoral degree before admission to candidacy. S/U graded. Repeatable, maximum of four credits.

EDRD 799 Doctoral Dissertation (1-12)
Required of all doctoral candidates. Students must earn 12 hours of credit for the dissertation in partial fulfillment of requirements for the doctoral degree. S/U graded. Repeatable, no limitations.

EDRD 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

EDSE — Special Education

EDSE 430 Exceptional Student in the Elementary Classroom (2)
EDFE 110 or EDFE 120 or EDFE 125. Provide elementary level licensure candidates current research/practices related to students with exceptionalities. Identify/adapt instruction for students with a wide range of disabilities. Field experience will be used extensively.

EDSE 434 Field of Special Education (3)
Historical development and present status of individuals with disabilities and those who are gifted. Focus on communication, parent involvement, finance, legal issues, ethics/professionalism and trends in special education.

EDSE 435 The Exceptional Learner (3)
Basic issues in dynamics of learning and evaluation related to exceptionality. Emphasizes understanding and evaluation processes for purposes of individual and group educational planning.

EDSE 502 Communication, Collaboration and Consultation for Special Educators (3)
Develop skills in intrapersonal/interpersonal dynamics in serving exceptional learners. Focus on communication, collaboration and consultation in the context of multicultural educational settings along a continuum of special education.

EDSE 503 Effective School Environments for Learners with Exceptional Needs (3)
Study of components of effective schools and the relationship to child, family, community and professionals. Roles of special educators and different service delivery models presented and analyzed.

EDSE 504 Transition Planning and Service Delivery for Students with Special Needs (3)
Provide theoretical framework in transition process from school to adult life including historical/legal, planning, curricular, interagency, self-determination and parent/family aspects of transition.
EDSE 505 Assessment of Exceptional Individuals (3)
Explore issues in assessment related to exceptional children. Emphasis placed on principles, purposes, and processes of assessment related to programming in special education.

EDSE 506 Teaching Students with Special Needs in Inclusive Settings (3)
Introductory course designed for regular classroom teachers with information about various disabilities and the gifted/talented. Emphasis on identifying, accommodating and adapting for students in inclusive settings.

EDSE 507 Field Based Experience (1-2)
The special education Teacher Candidate will be provided opportunities to observe, analyze and reflect on issues including diversity, professionalism, rights and responsibilities, and instruction in a K-12 classroom. S/U graded.

EDSE 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

EDSE 509 Strategies for Students with Exceptionalities (3)
Provides effective strategies to educate all students, particularly at secondary level. Overviews special education process and inclusive education models; characteristics, transitional needs, and culturally/linguistically different exceptional learners and their families.

EDSE 510 Foundations of Special Education (3)
This course is designed to provide the historical and legal foundations of special education and the educational implications for the educators of students with exceptionalities.

EDSE 511 Learning Environments and Cultural Considerations (3)
This course provides an overview of learning environments, collaboration and consultation among teachers, related services professionals, and families, and emphasizes culturally appropriate communication strategies.

EDSE 512 Assessment, IEP Development, and Instructional Planning (3)
Students gain knowledge and skills for selecting, adapting, and using assessments, developing Individualized Education Programs, and planning instruction within a continuum of service delivery models.

EDSE 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

EDSE 520 Survey of Learners with Severe Disabilities (3)
Includes an overview of persons with profound needs and their families including their characteristics and needs. Programmatic issues are also emphasized in relation to current research.

EDSE 521 Educational Assessment of Learners with Severe Disabilities (3)
Emphasizes the assessment – intervention – evaluation approach for learners with profound needs. The use of developmental/behavioral/ecological assessment approaches as well as transdisciplinary approaches are emphasized.

EDSE 522 Methods of Teaching Learners with Severe Disabilities: Early Childhood Transitions and the Elementary School Years (3)
Prerequisite: Full admittance to PTEP or certification at undergraduate level required. Reviews teaching approaches to serve students with profound needs at the preschool/vocational levels and application of approaches; emphasis on residential-employment competencies and transition from school to work.

EDSE 523 Methods of Teaching Learners with Severe Disabilities: Middle School, Secondary Settings, and Transitions to Adulthood (3)
Prerequisite: Full admittance to PTEP or certification at undergraduate level required. Reviews teaching approaches to serve students with profound needs at the prevocational/vocational levels and application of approaches; emphasis on residential-employment competencies and transition from school to work.

EDSE 524 Seminar in Education of Learners with Profound Needs (3)
Designed to synthesize experience and coursework in the area of educating students with profound needs. Emphasizes on issues, research, classroom application and consultation.

EDSE 525 Research and Policy for Learners with Profound Needs (3)
Consent of instructor. Includes research and policy relative to the learners with profound needs. Ethics of conducting research with these individuals, current research results and relevant public policy are the main foci.

EDSE 526 Practicum with the Learners Who Have Severe Disabilities (3-12)
Prerequisite: Full admittance to PTEP or certification at undergraduate level required. Entails supervised clinical experience with young and older individuals with profound handicaps. Daily supervision by a master teacher; with overall supervision by UNC faculty is provided. S/U graded. Repeatable, maximum of 12 credits.

EDSE 528 Linguistically Diverse Students with Low Incident Disabilities
Prerequisites: Regular admission into one of the Special Education Severe Needs Programs, or completion of one of the programs. Introduces instructional and assessment issues related to the education of linguistically diverse students with low incidence disabilities.

EDSE 530 Family/Professional Partnerships (3)
The course promotes in-depth reflection on collaboration with families of young children using a case method of instruction. Family systems perspectives and family centered approaches are emphasized.

EDSE 531 Assessment and Planning in Early Childhood Special Education (3)
The course explores theory and application of assessment methods in Early Childhood Special Education. Cross-disciplinary approaches, matching assessment procedures to the intended purpose, and linked assessment/planning systems are emphasized.

EDSE 532 Typical and Atypical Early Child Development: Application to Early Childhood Special Education (3)
The course will explore typical and atypical patterns of early child development; biological, cultural, and environmental influences; and implications for appropriate practice in Early Childhood Special Education.

EDSE 533 Curriculum and Instruction in Early Childhood Special Education (3)
The course explores recommended practices for inclusive education of young children with developmental concerns. Developmentally appropriate, individually responsive, cross-disciplinary, and evidence-based practices are emphasized across developmental domains.

EDSE 534 Research, Policy, and Advocacy in Early Childhood Special Education (3)
The course explores efficacy research, state and federal policies and systems, nationally recommended practices, and advocacy processes that support high quality services in Early Childhood Special Education (ECSE).

EDSE 535 Practicum in Early Childhood Special Education (2-15)
Prerequisites: EDSE 130 and passed PLACE/PRAXIS test. In their practicum experience, students build on knowledge and competencies gained throughout their master's program to synthesize their knowledge and apply recommended practices in ECSE settings.

EDSE 537 Practicum in EC/ECSE: Infants and Toddlers (2)
Prerequisites: Pass ECSE PLACE or PRAXIS II, Pass Elementary Content PLACE or PRAXIS II or documented Elem Ed License, Completion of PTEP courses (if any), Instructor consent. Students build on knowledge and competencies gained throughout their master's program to synthesize their knowledge and apply recommended practices in EC/ECSE settings for children birth to 3 years of age.
EDSE 538 Practicum in EC/ECSE: 3-5 Years (2)
Prerequisites: Pass ECSE PLACE or PRAXIS II, Pass Elem Content PLACE or PRAXIS II or documented Elem Ed License, Completion of PTEP courses (if any), Instructor consent. Students build on knowledge and competencies gained throughout their master's program to synthesize their knowledge and apply recommended practices in EC/ECSE settings for children 3-5 years of age.

EDSE 539 Practicum in EC/ECSE: 5-8 Years (2)
Prerequisites: Pass ECSE PLACE or PRAXIS II, Pass Elem Content PLACE or PRAXIS II or documented Elem Ed License, Completion of PTEP courses (if any), Instructor consent. Students build on knowledge and competencies gained throughout their master's program to synthesize their knowledge and apply recommended practices in EC/ECSE settings for children 5-8 years of age.

EDSE 540 Independent Living for Individuals with Visual Disabilities (1-2)
Required laboratory arranged. Gain ability to understand the use of adapted materials and techniques in teaching independent living to individuals with visual disabilities. Emphasis given to recreational areas. Repeatable, maximum of 2 credits.

EDSE 541 Introduction to Visual Impairment and Deaf-Blindness (3)
Historical perspectives and current educational services for the student with visual impairment and deaf-blindness across the lifespan. Emphasis is placed on growth and development and psychosocial effects of visual impairment.

EDSE 542 Assessment and Methods for Teaching Students with Visual/Multiple Disabilities (3)
Prerequisite: EDSE 120 or EDSE 125 or certification at undergraduate level required. Discuss causes, characteristics, educational implications and instructional methods for student with visual/multiple disabilities. Learn effective teaming and collaborative planning strategies.

EDSE 543 Braille Codes and Formats (3)
Study literary and nemeth codes, basic abacus operations. Techniques of teaching literacy skills to students with visual disabilities are included.

EDSE 546 Principles of Orientation and Mobility (3)
Philosophy and history of cane instruction, dog guides and other methods of travel. Techniques in developing orientation skills and pre-cane mobility instruction. Gross motor and concept development are presented.

EDSE 547 Individual Instruction in Orientation and Mobility (3)
Prerequisite: EDSE 120 or EDSE 125 and EDSE 546 or certification at undergraduate level required. Consent of instructor. Required laboratory arranged. A study of methods involved in general navigation and environmental awareness relating to severe vision needs. Travel techniques are gained while working under simulated conditions. Repeatable, maximum of four credits.

EDSE 548 Medical and Educational Implications of Visual Impairments (3)
Anatomy and physiology of the eye, medical and educational assessment of low vision and functional implications of various eye conditions. Techniques to develop use of functional vision.

EDSE 549 Assessment of Students with Visual Impairments (3)
Prerequisites: EDSE 541 and EDSE 548. Assessment related to learners with visual impairments. Determination of learning needs and appropriate learning media. Relationship of assessment, IEP development and placement.

EDSE 550 Foundations of Deaf Education (3)
This course is designed to provide the historical, legal, and cultural foundations of deaf education and the educational implications for the teacher and student who is deaf or hard of hearing.

EDSE 601 Supporting Special Students in the Mainstream (3)
Prerequisites: Full admittance to PTEP or certification at undergraduate level required. Interventions for students with moderate academic difficulties in inclusive settings including (a) collaborating in providing direct service and (b) providing scaffolds to enable students to perform independently.

EDSE 608 Case Studies with Students with Special Needs (3)
Prerequisites: Full admittance to PTEP or licensure at the undergraduate level required. Consent of instructor. Advanced study of assessment, teaching and learning for students with special needs. Includes development of assessment tools and techniques, methods, and research and teaching in special education.

EDSE 609 Language Development: Disorders of Individuals with Special Needs (3)
Prerequisites: Certification at undergraduate level required. In-depth study of language and speech disorders, including assessment instruments and teaching strategies related to language and communication. Focuses on the language of students with special needs.

EDSE 610 Interventions for Students with Severe Affective Needs (3)
Knowledge and classroom application of group and individual interventions for students with severe affective needs. Includes auxiliary services and parent interventions.

EDSE 611 Seminar in Severe Affective Needs (3)
Consent of instructor. This course is designed to synthesize experience and coursework in the area of students with severe affective needs. Emphases are on issues, research and classroom application.

EDSE 612 Practicum with Students with Severe Affective Needs, Ages 5-21 (3-12)
Prerequisites: Full admittance to PTEP or licensure at the undergraduate level required. Consent of instructor. Seminar required. S/U graded. Repeatable, maximum of 12 credits.

EDSE 613 Applied Assessment (3)
Prerequisites: EDSE 125 and EDSE 512 required. Students develop assessment skills related to students with disabilities focusing on principles, purposes, and the practice of assessment tools, including formal and informal measures.

EDSE 614 Behavioral Interventions (3)
Prerequisites: EDSE 125. This course is designed to provide special educators with researched-based assessment and intervention strategies for working with individuals who have behavioral needs.

EDSE 615 Special Education Law: Cases and Trends (3)
Enhances student's skills to read integratively special education laws and ensuing litigation. Readings will include public laws, court transcripts and a selected case synopsis(es) pertaining to a particular exceptionality.
EDSE 616 Scientifically Based Literacy Interventions (3)
Prerequisites: EDFE 125. Scientifically based literacy interventions for learners with exceptional needs; theoretical models related to interventions addressing the five reading components (i.e., phonemic awareness, phonics, vocabulary, comprehension, and fluency).

EDSE 617 Mathematics and Content Area Learning for Students with Disabilities (3)
Prerequisites: EDFE 125. This course prepare teachers to teach mathematics and content areas to students with disabilities. Scientifically research-based and validated methods will be emphasized for effective instruction, technology use, and collaborative support.

EDSE 618 Educating Students with Significant Support Needs (3)
Prerequisites: EDFE 125. This course addresses planning, managing, and collaboratively delivering educational plans and interventions for students with severe disabilities. It addresses academic, communication, behavioral, medical, and unique individual needs, K-12.

EDSE 619 Secondary Services (3)
Prerequisites: EDFE 125. This course includes an overview of transition services, academic strategies, community-based instruction, and contextual learning in a standards-based framework. Student self-determination and interagency coordination is included.

EDSE 620 Psycho-Social Aspects of Students with Severe Cognitive Needs (3)
In-depth study of sociological and psychological aspects of students with severe cognitive needs. Focuses on issues relative to life care and treatment of the cognitive needs student.

EDSE 621 Seminar in Severe Cognitive Needs (3)
This course is designed to synthesize experience and coursework in the education of students with severe cognitive needs. Emphases are on issues, research and classroom application.

EDSE 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

EDSE 623 Practicum with Students with Severe Cognitive Needs, Ages 5-21 (3-12)
Prerequisites: Full admittance to PTEP or licensure at undergraduate level required. Consent of major advisor. Integrative experiences of sufficient scope, intensity, and length to assure demonstration of all Teacher II cognitive program competencies. Seminar required. S/U graded. Repeatable, maximum of 12 credits.

EDSE 624 Communication, Sensory, and Social Skills Strategies for Working with Students with Autism (3)
Prerequisite: EDSE 678. This course provides strategies for assessing and planning for instruction in communication, assistive technology, sensory needs and social skills for students on spectrum including service delivery options, developing and implementing communication skills using evidence-based practices settings.

EDSE 625 Applied Behavior Analysis for Teachers (3)
Prerequisite: EDSE 678. Course content focuses on applied behavior analysis, target behaviors, functional behavior assessment and analysis procedures, recording behavior, interpreting and creating graphic displays, behavioral interventions, reinforcement schedules, self-management, and generalization and maintenance of behavioral change.

EDSE 626 Instructional and Behavioral Interventions for Students on the Autism Spectrum (3)
Prerequisite: EDSE 678. This course will focus on current instructional and behavioral interventions for children who are on the autism spectrum. Content will also be designed to provide learners with thorough background knowledge about interventions that are "effective" and "ineffective" as evidenced by their outcome data.

EDSE 640 Methods of Teaching Students with Visual Impairment (3)
Prerequisites: EDSE 120 or EDSE 125 and EDSE 541, EDSE 548. Curriculum development, adaptations, and teaching methodology for individuals with visual impairments. Modification of general and functional curricular areas. Emphasis on the integration of teaching skills and the core curriculum.

EDSE 642 Advanced Seminar in Education of Students with Visual Disabilities (3)
Prerequisites: Enrollment prior to or concurrent with EDSE 644, EDSE 120 or EDSE 125. Role and responsibilities of the teacher of students with visual impairments as an educational team member, professionalism, ethics, consultation and collaborative partnerships, and social skill development. Full PTEP Admittance.

EDSE 644 Practicum in Education of Students with Visual Impairments, K-12 (6-12)
Prerequisites: EDSE 120 or EDSE 125 and EDSE 130 and EDSE 541, EDSE 543, EDSE 546, EDSE 548, EDSE 549, EDSE 640, EDSE 645 or certification at undergraduate level required. Consent of instructor. Supervised teaching experience with students with visual disabilities, K-12, planning and implementing lessons, preparing materials, participating in staffings, IEP/IFSP development and parent conferences. Repeatable, maximum of 12 credits.

EDSE 645 Advanced Braille Codes and Formats (3)
Prerequisites: EDSE 543 or proof of mastery from an approved examination or other demonstration of basic literacy braille skills. Instruction in Nemeth Code (braille math code). Introduction to advanced braille codes, formats and techniques for teaching skills in each code including music, foreign language, chemistry, and computer braille.

EDSE 647 Assessment and Methods in Orientation and Mobility (3)
Prerequisites: EDSE 546. Consent of instructor required or certification at undergraduate level required. Weekly seminar explores methods and strategies for teaching independent travel techniques to students with visual and other disabilities. Student provides individualized instruction to visually impaired person with faculty supervision.

EDSE 648 Practicum in Orientation and Mobility (3-9)
Prerequisites: EDSE 120 or EDSE 125 or EDSE 550. Integration of theoretical and practical considerations involved in collaborating with families, service providers, and agencies.

EDSE 652 Auditory Skill Development: Deaf/Hard of Hearing (3)
Develop the knowledge and skills to assess and to teach auditory skill development to individuals who are deaf or hard of hearing. Field experience required.

EDSE 653 Speech: Deaf/Hard of Hearing (3)
Develop knowledge and skills to assess and to teach spoken language to individuals who are deaf or hard of hearing. Field experience required.

EDSE 654 Language: Deaf/Hard of Hearing (3)
Develop knowledge and skills to assess and facilitate the development of language skills of individuals who are deaf or hard of hearing. Field experience required.

EDSE 655 Literacy: Deaf/Hard of Hearing (3)
Develop knowledge and skills to assess and facilitate the development of literacy in individuals who are deaf or hard of hearing. Field experience required.
EDSE 657 Practicum: Deaf/Hard of Hearing (6-12)
Individual observation and supervised practice in the education of individuals who are deaf or hard of hearing. Repeatable, maximum of 12 credits.

EDSE 670 Legal and Policy Foundations of Special Education (3)
This course is designed for school personnel who are impacted by special education law. The course focuses on federal and state special education statutes, regulations, and case law.

EDSE 671 Fostering School and Community Relationships (3)
Prerequisite/Co-requisite: EDSE 670. This course provides specialist knowledge and skills related to consultation, collaboration, supervision, coaching, and support for educators, families, and paraprofessionals. Topics include the implementation of proactive strategies for empowerment.

EDSE 672 Leadership in the School Community (3)
Prerequisite/Co-requisite: EDSE 670. Foundational grounding for prospective teacher leaders to function as highly facilitative special educators who demonstrate leadership necessary to effectively interact with diverse populations including students, teachers, administrators, and parents.

EDSE 673 Research and Reflective Practice (3)
Prerequisite: EDSE 670. The role of inquiry in identifying promising practices is examined. Action research is highlighted, culminating in a work sample in which scientifically based interventions are designed, assessed, and described.

EDSE 674 Interventions in Literacy and Numeracy (3)
Prerequisite/Co-requisite: EDSE 670. This course will help individuals effectively select and implement research-based literacy and numeracy interventions as they related to students' strengths and needs at an individual student, classroom and school-wide level.

EDSE 675 Issues in Special Education Assessment (3)
Prerequisite/Co-requisite: EDSE 670. Provides a comprehensive perspective of assessment development, implementation, interpretation, and implications of results to inform educational practices including the practice of monitoring progress and collaborating with individuals, families and professionals.

EDSE 676 Curriculum and Instruction: Deaf/Hard of Hearing (3)
Develop the knowledge and skills to address and teach academic content to individuals who are deaf or hard of hearing. Field experience required.

EDSE 677 Transition to Adulthood for Youth with Exceptionalities (3)
Prerequisite/Co-requisite: EDSE 670. This course includes in-depth investigation into the provision of transition services and secondary services. Topics include transition-focused standards-based IEP development, self-determination, interagency coordination, career, educational strategies, and content enhancement routines.

EDSE 678 Strategies for Students with Autism/Significant Needs (3)
Prerequisite/Co-requisite: EDSE 670. This course critically analyzes issues of equity through a culturally responsive lens as it applies to assessment, interventions, and education of all students including those with diverse backgrounds.

EDSE 679 Interventions for Students with Cultural and Linguistic Differences (3)
Prerequisite/Co-requisite: EDSE 670. This course analyzes issues of equity through a culturally responsive lens as it applies to assessment, interventions, and education of all students including those with diverse backgrounds.

EDSE 680 Administration and Supervision of Special Education (3)
Designed to review problems and strategic opportunities in the administration and supervision of special education programs and services. Emphasizes include leadership and management, organizational planning and change, and strategic thinking.

EDSE 681 Administrative Planning and Program Evaluation in Special Education (3)
Prepares individuals to conduct program/service evaluations, organize data for decision-making purposes, understand resource utilization, develop collaborative partnerships, and integrate systems of accountability into other administrative functions.

EDSE 682 Foundations in Gifted Education (3)
The purpose of this course is to address the foundational underpinnings of gifted and talented education, including the history of the field; pertinent theories and research in the area of intelligence, creativity, and human development; knowledge of public policy; current brain research; and how these concepts can be applied in educational settings.

EDSE 683 The Gifted Learner: Nature and Needs (3)
The knowledge base of definitions, characteristics, traits and needs of diverse groups of learners with gifts and talents will be examined. Emphasis is placed on identification, assessment and appropriate placements.

EDSE 684 Assessment and Identification in Gifted Education (3)
Prerequisites: EDSE 680 and EDSE 683. The content of this course includes procedures in the assessment of students for the purpose of selecting appropriate and relevant educational strategies, and identifying students for services and programs.

EDSE 685 Curriculum & Instructional Practice in Gifted Education (3)
This course focuses on development of curriculum and implementation of teaching practices centered on discipline-based knowledge, learning styles, cultural variation, depth and complexity of content, and provisions for independent investigation.

EDSE 686 Emotional and Social Development of the Gifted and Talented (3)
This course is designed for learners to develop a knowledge base of the affective, social and cognitive development and needs of the various types of gifted students.

EDSE 687 Program Strategies and Services For the Gifted and Talented (3)
Prerequisite: EDSE 683. This course addresses the basic program models, strategies and services necessary for developing appropriate education for the gifted. Real-life scenarios are basic in determining appropriate strategies and services.

EDSE 688 Communication and Leadership in Gifted Education (3)
Topics include communication, consultation and collaboration for the implementation of education for the gifted and talented. Teachers are a main source of leadership for school, district and state levels.

EDSE 689 Creativity in Gifted Education (3)
The focus of this course is the examination of theories of creativity, research in creativity and the teaching of creative thinking skills in the context of gifted education programming.

EDSE 690 Highest Levels of Learning for the Gifted and Talented (3)
Prerequisite: EDSE 682, EDSE 683, EDSE 685. This capstone seminar is designed for learners to synthesize knowledge and skills regarding cognitive needs of students who are gifted and talented. Emphasis is on enrichment/acceleration, inquiry, seminars, in depth studies.

EDSE 691 Practicum in Teaching the Gifted and Talented (3-12)
Prerequisites: EDSE 683, EDSE 685, EDSE 687 and EDSE 130. Emphasize actual teaching and facilitation of learners who are gifted, talented, creative in actual supervised teaching experiences. Repeatable, maximum of 12 credits.
EDSE 693 Practicum in Special Education (3-12)
Prerequisites: EDSE 125, EDSE 510, EDSE 511, EDSE 512, EDSE 613, EDSE 614, EDSE 616, EDSE 617, EDSE 618, and EDSE 619. Supervised practicum in assessing, planning, and teaching students with exceptional learning needs in collaboration with families, education professionals, and community members. Unlimited Repeatability.

EDSE 697 Externship in Special Education: Administration (1-12)
Instructor consent. Supervised program of orientation, and participation designed to provide linkages between theory and practice in leadership and management of special education. Director of Special Education endorsement (post-Masters) only. Repeatable, maximum of 12 credits, under different subtitles.

EDSE 701 Introduction to Doctoral Study in Exceptionalities (1)
Develop knowledge, skills, concepts, and attitudes necessary for special and gifted education to effectively interact with diverse populations. Emphasis on development of individual goals/specific activities within program. S/U graded.

EDSE 702 Law of Exceptionalities (1)
Doctoral level course that analyzes and interprets federal, state, and case law relevant to teaching students with exceptionalities in a variety of educational settings.

EDSE 718 Advanced Seminar in Education of Students with Hearing and/or Visual Handicaps (3)
Investigation of the issues and trends in education of infants, children and youth with hearing and/or visual disabilities: focus on research, curriculum, instructional strategies and other administrative concerns.

EDSE 721 Theories of Exceptionality (3)
In-depth study of special education's enrichment by conceptions of the nature of exceptionality, learning and instructional strategies and emerging from biological and sociocultural constructivism, phenomenology and holism.

EDSE 723 Seminar in Facilitating Personal and Professional Development in Special Education (3)
Assist learners with development of the skills and knowledge necessary to function as special educators who effectively interact with diverse students, teachers, administrators and parents.

EDSE 727 Issues and Trends in Exceptionalities (3)
Investigates current issues and trends in special and gifted education, with specific focus on policy, research, curriculum, and instructional strategies.

EDSE 728 Professional Writing (3)
Explore purposes, protocols, and processes for professional writing; critical review of student writing by students and faculty. Focus on research reports, practitioner articles, research.

EDSE 729 Apprenticeship in Special Education (1-4)
Consent of instructor. Jointly defined experiences on campus in intensive mentor/apprenticeship project; participating in all aspects of inquiry, administration, or university teaching from planning through dissemination/publication. Repeatable, maximum of 12 credits, under different subtitles.

EDSE 730 Externship in Exceptionalities (3)
Prerequisites: Submission of an externship proposal 1 semester prior to enrollment. This course should be taken prior to submission of dissertation proposal. The externship requires 180 hours of supervised activities outside of UNC to expand the learner's knowledge base in a setting related to services for students with exceptionalities. Repeatable under different subtitles.

EDSE 731 Topical Seminar in Special Education (3)
Course content differs to ensure flexibility promoting cutting-edge knowledge. Faculty share expertise in depth. Students select from offerings to individualize program and utilize wide variety of methods of inquiry. Repeatable, maximum of 15 credits, under different subtitles.

EDSE 732 Research in Exceptionalities (3)
Examines research designs and methods used in special and gifted education. Emphasis on developing skills necessary to understand the relationship between research strategies and problems in special and gifted education.

EDSE 733 Preparing Teachers of Students with Exceptionalities (3)
Gain knowledge and skills to prepare teachers of students with exceptionalities. Content includes course syllabi development, application of research-based practices to course development, and mentoring and evaluating personnel.

EDSE 741 Colloquium on Literacy (1)
Examines issues and prominent theories of literacy research in special and gifted education. The relationship of this scholarship to current educational practices is explored.

EDSE 742 Colloquium on Talent Development (1)
Addresses topics related to the nature of disabilities, giftedness, twice exceptionality, talent development, and the contemporary approaches that foster individual competencies over deficits.

EDSE 743 Supervision in Exceptionalities (1)
Examines supervision of student teachers; internship; paraprofessionals; graduate research assistants, and clerical assistants. Exploration of leadership styles, communication methods, and conflict resolution skills.

EDSE 744 Grant Writing Seminar (3)
Develops grant writing skills essential for doctoral level personnel in special and gifted education, including identifying federal and state funding sources, panel reviews, and development of proposals, budgets, and evaluation.

EDSE 797 Doctoral Proposal Research (1-4)
Explores dissertation research problems, theoretical frameworks, methodology, and data analysis procedures expected to develop an approved dissertation proposal. S/U graded. Repeatable, maximum of four credits.

EDSE 799 Doctoral Dissertation (1-12)
Permission of major advisor. Required of all doctoral candidates. A student must earn 12 hours of credit for the dissertation as a partial fulfillment of requirements for any doctoral. S/U graded. Repeatable, no limitations.

EDSE 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

HSS — E NGLISH
ED 341 Methods for Teaching Composition in Secondary Schools (3)
Prerequisites: EDSE 120 or EDSE 125 and 3.0 in GPA in ENG courses or instructor permission to enroll. Content covers the writing process, composition theory, language and writing development in grades 7-12 with an emphasis on the teaching of writing.

ED 402 Methods for Teaching Literature in Secondary Schools (3)
Prerequisite: EDSE 120 or EDSE 125 and GPA of 3.0 in ENG courses or instructor permission to enroll. Prerequisite to student teaching. Selection of literature for young adults, use of media, curriculum and classroom organization, standards-based education, assessment and evaluation in a secondary school program.

ED 502 Methods for Teaching Literature in Secondary Schools (3)
Prerequisites: Enrollment as post baccalaureate student or a graduate student. Selection of literature, use of media, curriculum and classroom organization, standards-based education, assessment and evaluation in a secondary school program. In addition, students will address the introduction of critical theories of literature in the secondary classroom.

ED 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.
ELPS 513 Professional Renewal (1-3)  
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

ELPS 601 Leadership Development Through Inquiry (3)  
Experiences help students understand the nature of leadership and the importance inquiry plays in creating, using, and acquiring knowledge.

ELPS 603 Shaping Organizations: Management and Leadership in Education (3)  
Introduces students to qualities of effective leadership and management; organizational skill development; organizational behavior; and change in organizations.

ELPS 604 Understanding People: Professional Development and Educational Leadership (3)  
The fundamentals of working with people in educational organizations is reviewed. Emphasis is on adult learning, communications and working in teams, and personnel issues.

ELPS 605 External Environments: Social, Political, and Economic Influences in Educational Leadership (3)  
External influences on policies, curriculum and operations, including demographics, diversity, governance, partnerships, integrated service delivery for children and families, sources of revenue, budgeting and accountability.

ELPS 606 Internship in Educational Leadership (1-9)  
Involves part-or full-time leadership assignments in educational organizations. S/U graded. Repeatable, no limitations.

ELPS 608 Issues in Educational Leadership: Implications for Practice (3)  
Consent of instructor. Multiple perspectives will be used to review and analyze critical past issues and current educational dilemmas. Focus on solution strategies and their impact on practice.

ELPS 622 Directed Studies (1-3)  
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

ELPS 630 School Finance and Budgeting (3)  
Examines economics and politics of education, revenues for school systems, principles of taxation, conflicts between equality and efficient goals and local state and federal policies for education.

ELPS 651 School Business Management (3)  
Develops understanding of problems and procedures of such management functions as transportation, property control, food services, facility maintenance, purchasing, insurance and investments. Provisions for applications of technology to financial management.

ELPS 654 Instructional Leadership and Supervision (3)  
Examine the school leader's role supervising the teaching and learning process. Focus on curriculum development, instructional improvement, and developing capacity of others to become curricular and instructional leaders.

ELPS 660 Law and the Administrator (3)  
Relate statutory provisions, court decisions, common law principles and constitutional requirements to legal problems affecting organization and administration of public and private school systems.

ELPS 662 Design and Delivery of Professional Development (3)  
Explores the planning, delivery, and evaluation of professional development activities for adults. Emphasizes practical aspects such as needs identification and learning transfer. Course outcomes include creating a professional development program.

ELPS 663 Policy Analysis and Development (3)  
Study standard techniques for analyzing, evaluating and developing policies for educational systems and organizations, with special attention to contemporary policy issues.

ELPS 666 Planning and Change in Education (3)  
Consent of instructor. Understand planning and change theories; strategic planning development; particular emphasis on restructuring educational environments.

ELPS 667 Leadership at the District Level (3)  
Study the leadership responsibilities of school district administrators, with special emphasis on the knowledge, skills, and values needed by effective superintendents.

ELPS 670 The Principalship: Leadership at the School Site Level (3)  
Examine leadership and management issues of building principals, instructional leadership and problems facing principals at the site level.

ELPS 695 Practicum in Educational Leadership (1-3)  
Consent of instructor. Enables students to engage in a particular task/activity in educational leadership in one or more field sites. S/U graded. Repeatable, no limitations.

ELPS 751 Doctoral Core I (6)  
Consent of instructor. Team-taught seminar focusing on teambuilding and group processing, inquiry and reflective practice, and moral and ethical dimensions of leadership. Extensive attention given to developing scholarly writing skills.

ELPS 752 Doctoral Core II (6)  
Prerequisite: ELPS 751 or consent of instructor. Continued doctoral study in educational leadership and policy. Team-taught seminar exploring the nature of organizations, leadership and policy through readings, group discussions, and a collaborative research project.

ELPS 754 Research in Educational Leadership (3)  
Prerequisites: ELPS 751, ELPS 752, SRM 602 or consent of instructor. Classical and contemporary published quantitative and qualitative studies on organizations, leadership and policy studies are used to analyze research strategies and tactics.

ELPS 797 Doctoral Proposal Research (1-4)  
Prerequisites: ELPS 751, ELPS 752. To enable advanced doctoral students to learn the essential elements of effective research proposals and to develop analytic skills needed to critique other research. S/U graded. Repeatable, maximum of four credits.

ELPS 799 Doctoral Dissertation in Educational Leadership and Policy Studies (1-12)  
Prerequisite: ELPS 797. Approval of research advisor required. Complete research of a major problem in educational leadership and policy. Must earn total of 12 hours of credit. S/U graded. Repeatable.

ELPS 999 Graduate School Continuous Registration (1)  
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.
ENG 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

ENG 510 Advanced Placement Program—English (1-3)
Consent of Instructor. A course designed to provide content and pedagogical information related to the teaching of writing and literature in the secondary school English advanced placement program. S/U graded. Repeatable, no limitations.

ENG 513 Professional Renewal (1-4)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

ENG 530 Advanced Studies in World Literature (3)
An investigation of a theme, form or problem that cuts across periods and nationalities. Repeatable, under different subtitles.

ENG 593 The Rocky Mountain Writing Project (6)
Consent of instructor. Teachers teaching teachers about writing to extend their knowledge in theory and practice and to prepare them as writing consultants. Open to K-12 teachers in all disciplines. S/U graded. Repeatable, maximum of 12 credits.

ENG 594 Practicum in the Teaching of College Composition (3)
Consent of instructor. Train new teaching assistants in Department of English to teach college level composition to UNC students.

ENG 600 Introduction to Graduate Study (3)
An orientation to graduate study in general and the nature and methods of research in particular. Should be taken during the first semester of graduate work.

ENG 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

ENG 623 Old English (3)
Students will study the language and literature of Anglo-Saxon England, translating important historical and literary documents in prose and poetry, including works by Alfred, Aelfric, and others.

ENG 624 Middle English (3)
An introduction to Middle English literature. Authors considered may include Chaucer, Langland, Kempe, and the Pearl poet. Readings may include drama, narrative poetry, lyric poetry, narrative prose and devotional literature.

ENG 625 Studies in the Renaissance (3)
A survey of selected Renaissance texts, including works by Spenser, Shakespeare, Donne, and Milton. Emphasis on historical contexts and recent criticism, including new historicist, feminist, psychoanalytic, and queer approaches.

ENG 626 Studies in the Restoration and Eighteenth Century (3)
Representative poetry, prose, and/or drama in England from 1660-1789, including such writers as Dryden, Behn, Astel, Finch, Pope, Swift, Defoe, Fielding, Boswell, Johnson, Gray, Equiano, Barbauld, Wycherley, and Congreve.

ENG 627 British Romantic Literature (3)
British Literature, 1780-1835, with emphasis on poetry, the novel, and non-fiction prose. Central issues include the Romantic poetic, the French Revolution, and the growth of the English nation.

ENG 628 Studies in the Victorian Period (3)
British literature from 1832-1900, with primary focus on prose fiction, non-fiction, and poetry. Emphasis on the intellectual currents of the period as reflected in the literature of the age.

ENG 629 20th Century British Literature (3)
Studies in British literature of the twentieth century, with primary focus on fiction, poetry, and non-fiction prose. Emphasis on cultural and intellectual influences on the literature of the era.

ENG 630 American Literature to the Civil War (3)
American literature from 1590-1865, with primary focus on prose fiction, non-fiction, and poetry. Emphasis on New-and Old-World cultures and the contribution of writing in the creation of cultures.

ENG 631 Studies in American Literature Civil War to WWI (3)
Seminar in ideas and representative authors during the late 19th and early 20th centuries. An examination of both the intrinsic literary quality of selected texts and their sociopolitical, historical, and cultural contexts.

ENG 632 American Literature WWI to Present (3)
Studies in American literature 1914 to the present, with primary focus on fiction, poetry, and non-fiction prose. Emphasis on cultural and intellectual influences on the literature of the era.

ENG 633 Studies in Linguistics (3)
Seminars in various topics ranging from the evolution of English from its beginnings to dialectology, semantics, stylistics and psycholinguistics. Repeatable, maximum of nine credits, under different subtitles.

ENG 634 Studies in World Literature (3)
Seminars in writers or works in translation to illustrate generic, thematic, national, or cultural approaches to world literature. Repeatable, maximum of nine credits, under different subtitles.

ENG 638 Literary Criticism and Theory (3)
Prerequisite: ENG 600. Historical survey of different theoretical approaches to literary and cultural criticism and pedagogy, including classical, renaissance, and eighteenth-century movements. Emphasis on twentieth-century schools.

ENG 639 Colloquium in Literature (3)
Seminars in various topics (e.g., the tragic hero, alienation, the experimental novel) related in form and/or idea and drawn from American, British or World literature in translation. Repeatable, maximum of nine credits, under different subtitles.

ENG 640 History and Theory of Rhetoric (3)
Readings in selected rhetoricians, including Plato, Aristotle, Augustine, Erasmus, Ramus, Bacon, Montaigne, Campbell, Blair, Bakhtin, Richards, Gates, Cixous, Kristeva.

ENG 641 Studies in Composition Research and Pedagogy (3)
Reading in composition theory and pedagogy, including expressivist, cognitive, historical, rhetorical, social epistemic, discourse, and cultural studies.

ENG 642 Film Theory and Analysis (3)
This seminar explores major debates and developments in film theory from the 1920s to recent decades. Theories are illustrated with the technical and aesthetic analysis of specific films.

ENG 697 MA or Creative Project (3)
Consent of Instructor. Select MA project, a journal-appropriate research paper of 30-50 pages., or creative project (collection of poems, short stories, or novel chapters). Proposal approval by advisor and public presentation (faculty/students) required.
ENST — ENVIRONMENTAL STUDIES

University College
- Contact (970) 351.2220
- www.unco.edu/environmental/location.html

ENST 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

ENST 509 Advanced Placement Environmental Sciences/Studies (2)
Consent of Instructor. Topics in Environmental Sciences/Studies and pedagogy related to establishment and maintenance of an environmental science advanced placement program. S/U graded. Repeatable, no limitations.

ENST 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

ENST 515 Sustainable Solutions to Environmental Problems (3)
Examine the structural and functional relationships of the environment with emphasis on present and long-term problems, and understand the validity of solutions for environmental sustainability.

ESCI — EARTH SCIENCES

School of Earth Sciences and Physics
- Contact (970) 351.2647
- www.unco.edu/esp

ESCI 375 Earth Systems Science Education (1-6)
A variable content course covering integrated science content and pedagogy from the following: atmosphere (air), biosphere (life), hydrosphere (water), and/or lithosphere (land/rock). Repeatable, under different subtitles.

ESCI 584 Earth Sciences Field Experiences (1-15)
Consent of instructor. Field studies in astronomy, geology, meteorology and/or oceanography, usually preceded by on-campus orientation. Schedule of classes lists specific area and topic to be investigated when course is offered. Repeatable under different subtitles. Field trip required.

ESCI 399 Seminar in Earth Sciences (1)
Consent of instructor. Invited speakers, including graduate students, faculty and guests, present current earth science research topics in seminar format. Required of graduate students all semesters they are in residence at UNC. S/U graded. Repeatable, no limitations.

ESCI 600 Introduction to Earth Science Research (2)
Consent of instructor. Nature and methods of research in the earth sciences. Development of research proposal that will provide the basis for thesis or graduate research project. Required of all first year Earth Sciences graduate students.

ESCI 605 Global Change (3)
Prerequisite: 8 hours graduate level science. An online, problem-based course in which students conduct data analysis on climate variability, modeling, and Earth system impacts and apply results to societal issues.

ESCI 693 Special Topics in Earth Sciences (2)
Consent of instructor. Faculty and students select an earth sciences topic for intensive study beyond the scope of existing departmental course offerings. Repeatable, under different subtitles.

ESCI 697 Graduate Research (1-6)
Consent of instructor. Qualified graduate students select and research a problem and present professional quality written report. Repeatable, maximum of six credits.

ESCI 699 Thesis (1-6)
Intensive study of selected earth sciences topic under the direction of student's graduate studies committee. S/U graded. Repeatable, no limitations.

ET — EDUCATIONAL TECHNOLOGY

Department of Educational Technology
- Contact (970) 351.2816
- www.unco.edu/cebs/edtech

ET 347 Educational Technology Applications for Elementary Teaching (1)
Prerequisite: ET 247. Provisional or full admittance to PTEP required. Sophomores or above. Integration of various instructional delivery systems within teaching. Content-specific and elementary applications of computing, video, print, hypermedia and multimedia, telecommunications technologies and issues relevant to the elementary education community.

ET 500 Introduction to Instructional Design and Technology (3)
This is a survey course examining the broad field of educational technology, with an emphasis on both K-12 settings and corporate/business environments.

ET 501 Introduction to Applications of Educational Technology (3)
Instruction and practice with computer systems, video and other technological tools. Applications include word processing, spreadsheets and presentation software. Visual and information literacy skills and copyright trends are addressed.

ET 502 Instructional Design (3)
Covers a systematic process of design for determining instructional content and creating effective, efficient, and appealing self-paced instruction.

ET 503 Computers in Education (3)
Prerequisite: ET 501 or permission of instructor. Instruction for intermediate to advanced applications of current computer-based technologies. Introduction to a variety of other technology related topics with an emphasis on educational applications and integration.

ET 504 Instructional Materials Design (3)
Procedures for designing and developing instructional materials. Includes scripting and production specifications for graphic, audio, slide/tape and/or video formats.

ET 524 Design of Computer Assisted Instruction (3)
Prerequisite: ET 503. A study of the design and development of computer assisted instruction, introducing both authoring system and general purpose programming language paradigms.

ET 533 Information Literacy & Reference (3)
Study research-based instructional strategies and process models to teach information literacy and information skills in elementary and secondary school libraries.

ET 535 School Library Administration and Leadership (3)
Learn the essentials of organizing and administering school libraries in elementary and secondary schools.

ET 538 Selection, Evaluation, & Utilization of Library Materials & Cataloging (3)
Majors only. Designed to provide an overview of the processes and procedures required to successfully develop, maintain, and evaluate a collection program of print and non-print materials in a school library.

ET 601 Managing People, Projects, and Technology Systems (3)
Prerequisites: ET 502, ET 503. For teachers of technology skills in diverse environments (public schools to corporations). Topics include instructional design, theories, strategies, ethics and interpersonal skills for effective and appealing learning environments.

ET 602 Performance Technology for Instructional Environments (3)
Prerequisite: ET 502. Application of contemporary methods of assessment, design, development, implementation and evaluation of instructional courses, programs and systems.
ET 604 Computer Graphics and Visual Literacy (3)
In this course you will apply principles of human learning, perception, and motivation to the design and production of visual materials to support learning and performance.

ET 613 Design of Distributed Learning Environments (3)
Provides students with knowledge and experiences in designing, developing and delivering e-learning courses. Using instructional design principles as a foundation, the course covers the fundamental elements that make web based instruction effective.

ET 615 Distance Education: Theories and Practice (3)
Includes an overview of distance education foundations (design and assessment), application and implementation (interactivity and hypermedia design), and management issues (copyright, course management systems, and policy).

ET 617 Development of Online Applications (3)
Prerequisites: ET 502, ET 503 and ET 524; ET 613 or ET 615 strongly recommended. Focus on the design, development and implementation of interactive online network applications. Emphasis on instructional environments, application development necessary simulations, database development, evaluation. Secondary emphasis creating an ADA compliant online application.

ET 622 Directed Study (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

ET 627 Design of Games and Simulations (3)
Prerequisites: ET 503, ET 524 Design and development of computer-based games and simulations for education. In addition to exploring various tools, this course also will examine research and implementation issues related to various educational settings.

ET 628 Design of Multimedia Learning Environments (3)
Prerequisites: ET 503, ET 524. Investigation of the theory, implementation, practice, and research on interactive, computer based instructional systems including videodisk, videotape, digital video, CD-ROM, and image capture technologies.

ET 650 Case Studies in Performance and Instructional Technology (3)
Consent of Instructor required. Course uses a case study approach to the analysis, design, and evaluation of performance and educational environments.

ET 692 Internship (3)
Advisor's recommendation and permission of program director. Individual field experience in educational technology. Field experience and summative report format must be approved by advisor. S/U graded. Repeatable, no limitations.

ET 693 Practicum (1-3)
Supervised professional activity requiring a minimum of 10 hours per week. Develop project, product or technological device unique to the field. An approved end of semester project report is required. S/U graded. Repeatable, no limitations.

ET 694 Elementary School Library Internship (1)

ET 695 Special Topics in Educational Technology (1-3)
Consent of instructor. Scheduled on irregular basis. Explore special topics in Educational Technology. An appropriate subtitle will explain each course. Repeatable.

ET 696 Secondary School Library Internship (1)

ET 702 Instructional Design Theory and Research (3)
Prerequisite: ET 602. Includes examinations of theories underlying instructional design methods. Review and critique of basic and applied research bases is featured.

ET 782 Doctoral Seminar in Educational Technology I (3)
Prerequisite: ET 500. Investigation of the development, theory, and research bases of the field of Educational Technology.

ET 784 Doctoral Seminar in Educational Technology II (3)
Prerequisite: ET 782 Investigation of the development, theory, and research bases of the field of Educational Technology.

ET 797 Doctoral Proposal Seminar (1-4)
Design research proposals and conduct pilot studies to examine feasibility of proposed hypothesis. Summarize existing research, identify problems, develop hypotheses and justify selection of design components. S/U graded. Repeatable, maximum of four credits.

ET 799 Doctoral Dissertation (1-12)
Required of all doctoral candidates. Must earn 12 hours of credit for the dissertation as partial fulfillment of requirements for all doctoral degrees. Repeatable, no limitations.

ET 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

NHS — FOOD, NUTRITION AND DIETETICS

FND 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

FND 510 Foodservice Management (2)
Intensive review course for students beginning their dietetic internship. Overview of relevant issues and critical problems concerning all levels of systems management and dietetic food service administration.

FND 512 Medical Nutrition Therapy Skills (2)
An overview with case practice of medical nutrition therapy for dietetic interns. Several topics are covered with an emphasis on clinical skills.

FND 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.
FND 520 Maternal and Child Nutrition (3)
Prerequisite: Consent of instructor. Developmental stages, nutrient requirements, appropriate diet and eating behaviors for children from conception through school age. Nutrition related conditions of children and nutrition for the pregnant and lactating woman.

FND 555 Nutrition for Fitness and Athletic Performance (3)
Prerequisite: FND 245 or FND 250 or FND 357 or consent of instructor. The study of nutrition principles as they apply to the promotion of optimal physical fitness and athletic performance. Current research and evaluation of nutritional recommendations will be stressed.

GEOG 507 Geographical Information Science (3)
Consent of instructor (interview to determine expertise and academic background). Examines the nature and accuracy of spatially referenced data, as well as methods of data capture, storage, retrieval, modeling and output using GIS software.

GEOG 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

GEOG 509 Advanced Placement Institute in Human Geography (2)
Graduates only. Intensive course for teaching AP Human Geography. Topics include both content and pedagogy for establishment, development and maintenance of an AP program. S/U graded. Repeatable, no limitations.

GEOG 510 Topics in Teaching Geography (2)
Appraise and become familiar with various concepts, theories and skills in geography and with the techniques and methodologies appropriate for teaching them. Repeatable, maximum of six credits.

GEOG 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

GEOG 520 Topics in Systematic Geography (3)
Grades only or consent of instructor. Examine a selected area of systematic geography; consider appropriate pedagogical approaches in teaching about that geographic topic. Repeatable, under different subtitles.

GEOG 525 Topics in Regional Geography (2)
Grades only or consent of instructor. Examine a selected geographic region; consider appropriate pedagogical approaches in teaching the geography of the region. Repeatable, under different subtitles.

GEOG 540 Biogeography (3)
Identify meaningful patterns in the distributions of plants and animals and explain how/why those patterns developed. Includes an examination of the role humans have played in shaping those patterns.

GEOG 592 Field Course in Geography (1-6)
Study and apply techniques used, solve geographic problems in the field and effectively present results of such studies. Unlimited repeatability.

GEOL 510 Groundwater Geology (2)

GEOL 521 Igneous and Metamorphic Petrology (4)
(2 lecture, 4 laboratory) Prerequisite: GEOL 320. Description and classification of igneous and metamorphic rocks in hand sample and in thin section. Includes a study of the genesis of igneous and metamorphic rocks via phase diagrams and chemical reactions.

GEOL 540 Paleontology (4)
(3 lecture; 3 laboratory) Prerequisite: GEOL 202. Study of fossils including taxonomy, systematics, taphonomy, functional morphology, paleoecology, biostratigraphy, extinction, evolutionary trends and major events in the history of life. Labs review major fossil groups. Field trips required.

GEOL 543 Vertebrate Paleontology (3)
GEOL 202 or permission of instructor. A survey of the evolution of vertebrates through geologic time, emphasizing major events in the history of vertebrates. Includes field trips and methods of fossil collection, preparation, and curation.

GEOL 550 Sedimentology and Stratigraphy (4)
(3 lecture, 3 laboratory) Prerequisite: GEOL 202. Sedimentary processes; depositional environments; classification and structures of sedimentary rocks; field and laboratory methods of analyzing and interpreting outcrops and samples. Regional stratigraphy of northeastern Colorado investigated. Field trips required.

GEOL 560 Geomorphology (3)
(2 lecture, 3 laboratory) Prerequisite: GEOL 100 or GEOL 201. Origin and evolution of landforms emphasizing fluvial processes, hydraulic characteristics of streams, morphology of drainage basins, landscape evolution by stream sculpture and deposition and lithologic, climatic and structural controls.

GEOL 564 Glacial and Quaternary Geology (3)
Prerequisite: GEOL 100 or GEOL 201. A survey of geologic phenomena that characterized the Quaternary Period, with emphasis on the behavior of glaciers, glacial landforms and sediment and climatic implications. Two Saturday field trips required.

GEOL 567 Volcanic Geology (3)
(2 lecture, 3 laboratory) Prerequisite: GEOL 202 or consent of instructor. A study of volcanoes and volcanic processes and products. Emphasis on the origin, classification and interpretation of volcanic rocks and ejecta and volcanic structures and landforms.

GEOL 570 Structural Geology (4)
(3 lecture, 3 laboratory) Prerequisites: GEOL 202. Mechanics of rock deformation and geometric structures of the earth’s crust - their description and classification, theories and facts regarding their origins and methods of investigating them. Field trips required.

GEOL 581 Geologic Field Techniques (2)
(4 laboratory) Prerequisites: GEOL 450, and GEOL 470. Techniques of obtaining and recording geological data in the field and constructing geological maps. Includes use of Brunton compass, plane table and aerial photographs and the preparation of geological reports.

GEOL 590 Rocky Mountain Geology Seminar (2)
Consent of instructor. Geology of selected Rocky Mountain area thoroughly investigated by means of four-day field trip to that area followed by seminar presentations on topics relevant to geology of specified area.

GEOL 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.
GER 625 Psychosocial Aspects of Aging (3)
Later life issues are explored using an ecological approach that highlights the benefits and consequences of aging for the individual, family, and society.

GER 630 Intervention Strategies with the Elderly (3)
Analyze major intervention strategies and techniques for utilization with older adults. Emphasizes individual, group and paraprofessional systems. Classroom practice of actual treatment techniques.

GER 635 Social Policies of Aging (3)
Traces history and current status of major policies that benefit elderly. Reviews legislation, levels of policy-making and policy concerns of older population. Includes recent policy changes and policy directions.

GER 640 Health Aspects of Gerontology (3)
Identifies major health problems, concerns and practices of the elderly. Examines health care policies, financing, health promotion and wellness concepts.

GER 655 Program Planning and Evaluation in Gerontology (3)
Survey of basic concepts used in the development and implementation of aging programs. Emphasizes methods and skills needed for the assessment, development and evaluation of programs.

GER 660 Financial Management and Budgeting for Aging Programs (2)
Overview of financial and budgeting functions within human services. Emphasizes non-profit and private non-profits. Directed to non-accountants. Develop basic skills in financial control and fund-raising.

GER 692 Graduate Internship in Gerontology (1-12)
Only 9 credits may be counted towards degree program. S/U graded. Repeatable, maximum of 12 credits. There shall be 40 contact hours per credit hour.

GER 694 Practicum in Gerontology (1-4)
Make application to the department before registration. Repeatable, maximum of eight credits.

GER 699 Thesis (1-6)
S/U graded. Repeatable, no limitations.

GER 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

HESA 601 Introduction to Higher Education & Student Affairs (3)
Introduction to the higher education and student affairs profession. Examined through organizational lenses, ethics, social values, historical documents, and social justice. Emphasis on theory to practice, philosophy, and diversity.

HESA 611 Organization and Administration (3)
Develop an understanding of contemporary post-secondary education organizational and administrative theories. Emphasis on theories related to power, multicultural work environments, and other pluralistic models.

HESA 612: Higher Education Assessment and Evaluation (3)
Develop an understanding of contemporary post-secondary education organizational and administrative theories. Emphasis on theories related to power, multicultural work environments, and other pluralistic models.

HESA 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

HESA 650 College Student Development: Foundational Theory (3)
Examines foundational and life span theories of college student development and applies them to students’ lives and higher education and student affairs practice.

HESA 651 Philosophical, Historical and Cultural Foundations of Student Affairs in Higher Education (3)

HESA 652 Enrollment Management Services (3)
Examines and reviews the history, purposes, functions, organization and administration of Admissions, Financial Aid, Records and Registration, Advising and Orientation.
HESA 655 Multiculturalism in Higher Education and Student Affairs Leadership (3)
Exploration of meaning making from individual cultural lenses to the application of theory to practice in higher education settings. Assessment of multicultural competence within HESA.

HESA 658 Helping Skills for Practitioners (3)
Exploration of intervention models and helping relationships for professionals working with diverse college students including: student needs assessment, intervention strategies, conflict coaching, restorative models of accountability.

HESA 661 Practicum in College Teaching for Student Development (3)
Consent of instructor. Actual classroom experience in teaching under supervision any course that has as a part of its objectives, developmental content. S/U graded.

HESA 668: College Students: Culture, Characteristics, Campus Life (3)
Investigates diverse college student cultures, subcultures, student development, and student engagement. Considers effect on students’ progress and success, social media, parental involvement, and ethnic, socioeconomic, gender, sexual identity of students.

HESA 669 Culturally Responsive Aspects of Transformative Learning (3)
Develop understanding of learner centered approaches examining theories of culturally responsive pedagogy and transformative learning.

HESA 670 Internship in Higher Education and Student Affairs Leadership (6)
Consent of instructor. Field-based experience, applying theoretical and conceptual knowledge in higher education setting. Minimum 20 hours per week. In-depth experience with overall functions of office/agency. Develop skills in specific professional role. S/U graded. Repeatable, maximum of 18 credits.

HESA 671 Introduction to Leadership in Higher Education and Student Affairs Leadership (3)
Course focuses on leadership theory to assist ethical scholar/leaders prepare for leadership roles in diverse organizations.

HESA 675 Field Experience in Higher Education and Student Affairs Leadership (1-3)
Consent of instructor. Application of theoretical/conceptual knowledge in field-based experience. Overview of role, function of higher education office/agency, with focus on specific projects or responsibilities. Requires 4 hours per week per credit hour. S/U graded. Repeatable, maximum of 12 credits.

HESA 680 Law and Higher Education (3)
Relate statutory provisions, court decisions, common law principles and constitutional requirements to legal problems affecting public and private higher education institutions and systems.

HESA 683 Finance and Resource Management in Higher Education (3)
Analyze issues of financing public and private higher education; examine alternative financing sources and methods; develop skill in resource allocation and management.

HESA 685 Human Resources in Higher Education (3)
The course focuses on understanding Human Resource Management (HRM) as an energy source for shaping institutions. Emphasis is on the practical application of achieving change through personnel and compensation administration.

HESA 690 Public Policy in Higher Education (3)
An examination of public policy issues in higher education. Study of role of state and federal policy as it impacts public and private institutions of higher education.

HESA 695 Current Issues in Higher Education and Student Affairs Leadership (3)
In this seminar students will examine and analyze current issues and trends in higher education. Specific content will vary, dependent upon the nature of contemporary issues and trends and student interests.

HESA 696 Special Topics in Higher Education and Student Affairs Leadership (1-4)
Study of special topics in higher education and student affairs leadership. Topics vary. Repeatable, maximum two times, under different subtitles.

HESA 751 Advanced College Student Development: Social Identity (3)
Prerequisite: HESA 650 or consent of instructor. Second of two student development theory courses. Examines the social identity of college students, including privilege and oppression, multiple identities and diversity development. Racial identity, ethnic identity, multiracial/multicultural identity, sexual identity, and additional dimensions of identity (class, gender, ability/disability) are also discussed.

HESA 761 Scholarly Writing for Scholar/Leaders (3)
Seminar focusing on scholarly writing skills and examination of the macro perspective of leadership.

HESA 765 Advanced Multiculturalism (3)
The course focuses on system of privilege, pluralism, and advanced multiculturalism in higher education and student affairs.

HESA 771 Advanced Leadership in Higher Education and Student Affairs Leadership (3)
Prerequisite: HESA 671 or consent of instructor. Courses focuses on advanced leadership theory to assist ethical scholar/leaders prepare for leadership roles in diverse organizations. Emphasis is on advanced leadership theory and its application to diverse higher education and student affairs organizations.

HESA 781 Collaborative Inquiry for Scholar/Leaders (3)
Prerequisites: HESA 761. Continued doctoral study in higher education and student affairs leadership focusing on collaborative research. Explores research framework and design through a collaborative research project.

HESA 782 Research Capstone in Higher Education and Student Affairs Leadership (3)
Prerequisites: HESA 760, HESA 761, HESA 781. This course focuses on three themes, data analysis and representation of findings, writing for publication, and navigating the comprehensive exam and dissertation processes.

HESA 797 Doctoral Proposal Research (1-4)
Permission of major advisor. Required dissertation proposal experience for all doctoral students. Four hours of credit must be earned in this course in partial fulfillment of requirements for doctoral degrees before admission to candidacy. S/U graded. Repeatable, maximum of four credits.

HESA 799 Doctoral Dissertation (1-12)
Permission of major advisor. Required of all doctoral candidates under the direction of a graduate faculty committee. May be taken only after admission to candidacy. S/U graded. Repeatable, no limitations.

HESA 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.
HRS — Human Rehabilitative Services

HHS — HEALTH AND HUMAN SCIENCES

College of Natural and Health Sciences
• Contact (970) 351.2877
• www.unco.edu/nhs

HHS 508 Workshop in Health and Human Sciences (1-6)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

HHS 555 International Perspectives on Health and Human Services across the Lifespan (3)
An interdisciplinary course designed to introduce students to different aspects of health and human services across the lifespan. It will prepare students for a dynamic, diverse and global society.

HIST — HISTORY

Department of History
• Contact (970) 351.2905
• www.unco.edu/history

HIST 400 Teaching History in the Secondary Curriculum (1)
EDFE 120 or EDFE 125 required. Teaching history methods, emphasizing content based history standards at secondary school level. S/U grades.

HIST 510 Seminar in Chinese History (3)
Graduates only. An analysis of the topics in Chinese history from earliest times to the present. Repeatable, maximum of six credits, under different subtitles.

HIST 511 Modern Japan (3)
Graduates only. An historical analysis of the late Tokugawa period to the present. Emphasizes internal changes in political, social, economic and cultural institutions.

HIST 512 Seminar in Asian History (3)
Graduates only. Investigates selected topics in the history of China, Japan, India and Southeast Asia. Repeatable, maximum of six credits, under different subtitles.

HIST 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

HIST 516 Seminar in Latin American History (3)
Graduates only. Investigates selected topics in Latin American history. May focus on colonial or post-independence period. Repeatable, may be taken two times, under different subtitles.

HIST 518 Modern Africa (3)
Graduates only. A study of central issues of modern African history, including social transformation, the emergence of the nation-state, economic underdevelopment and the problem of southern Africa.

HIST 520 Colonial America 1492 to 1763 (3)
Graduates only. Investigates topics in the history of colonial and revolutionary America through direct research and/or readings.

HIST 522 Seminar in Southwest History (3)
Graduates only. Focus of seminar will be on research and writing topics for the American Southwest from the Spanish period through the territorial period to the statehood period when full admission secured.

HIST 529 American Indian History (3)
Graduates only. Covers the American Indian experience from prehistory to the present, emphasizing themes of environment, diversity and perception of native peoples by outside observers.

HIST 530 Topics in American History (3)
Graduates only. Investigation of a topic in American history. Content depends on instructor. Repeatable, maximum of 15 credits, under different subtitles.

HIST 534 Advanced Placement Program in World History (1-3)
Graduates only. Intensive course in the study and interpretation of world history, designed for secondary school teachers teaching advanced placement courses in world history. Includes writing of model syllabi and extensive historical analysis. S/U graded. Repeatable, no limitations.

HIST 535 Advanced Placement Program-US History (1-3)

HIST 536 Advanced Placement Program in European History (1-3)
Graduates only. Intensive course in European historiography and interpretation, designed for secondary school teachers teaching advanced placement courses in European history. Includes writing of model syllabi and extensive historical analysis and assessment. S/U graded. Repeatable, no limitations.

HIST 537 Advanced Study in the History of American Education (3)
Graduates only. Review of the development of American education from colonial times to the present, focusing on the European roots of the educational system to its impact on America's character.

HIST 550 Industrial America (3)
Graduates only. Focus on the industrial transformation of the United States during the late nineteenth century. The economic developments as well as the political, social and cultural ones will be examined.

HIST 552 History of World War II (3)
Graduates only. A survey of World War II from the rise of the totalitarian states to the dropping of the atomic bombs, with an emphasis on American military and naval operations.

HIST 557 Seminar in Medieval and Renaissance History (3)
Graduates only. A seminar for advanced undergraduate and graduate students that will investigate select topics in Medieval and Renaissance history through research and readings.

HIST 589 Modern Europe (3)
Graduates only. A consideration in depth of European historical development from 1815 to the present, focusing on political, diplomatic and economic matters. Repeatable, maximum of 15 credits, under different subtitles.

HIST 600 Introduction to Graduate Historical Study (3)
Examines the nature of history, historical research and the writing of history.

HIST 622 Directed Studies (1-6)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

HIST 699 Thesis (1-6)
Optional for Master of Arts programs on recommendation of the major advisor. S/U graded. Repeatable.

HRS — HUMAN REHABILITATIVE SERVICES

School of Human Sciences
• Contact (970) 351.2403
• www.unco.edu/nhs/rehabilitation

HRS 580 Rehabilitation Principles and Case Management (3)
Introduction to comprehensive rehabilitation history, philosophy, legislation and process. Details role and functions of case management and coordination with community, government and industry.

HRS 581 Vocational Evaluation and Assessment of People with Disabilities (3)
Basic principles in vocational evaluation and assessment of persons with disabilities. Skills development in use of various testing instruments, methods and effective interpretation of results.
HRS 585 Occupational Information and Job Placement (3)
Prepares students to work in the field of vocational counseling. Identifies job analysis, development and placement practices for successful transition of handicapped client to gainful employment.

HRS 592 Special Topics in Rehabilitation (1-4)
Course designed to investigate a specific aspect of rehabilitation. Repeatable, maximum of nine credits, under different subtitles.

HRS 597 Counseling and Treatment of the Substance Abuser (3)
This course will provide advanced work in the substance abuse treatment and counseling. Instruction in treatment modalities, explore research topics and build counseling techniques appropriate for this population.

HRS 601 Practicum in Rehabilitation (1-4)
Supervised professional activity in student's field; approximately 37 clock hours of work per credit. Two copies of well written paper must be filed before credit is given. Repeatable, no limitations.

HRS 604 Family, Cultural and Psychological Aspects of Disability (3)
Develop an understanding of and sensitivity to the psychological, social, interpersonal, family and cultural aspects of and adjustments to disability, including successful vocational outcomes.

HRS 605 Medical Aspects of Disability (3)
Appraises medical implications in rehabilitation: nature, cause, treatment, limitation, progress, social and occupational aspects of injury, medical terminology and the role of medical specialist.

HRS 610 Interpretation and Evaluation of Behavioral Research (3)
Understanding of applications of appropriate statistical techniques and necessary skills for interpretation and evaluation of research in human services. Emphasizes basic concepts, design and utilization of behavioral research.

HRS 622 Directed Studies in Human Rehabilitation (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

HRS 630 Human Services Counseling Theories and Techniques (3)
Analyze counseling theories as they are applied to human services. Develop basic counseling skills.

HRS 631 Group Processes in Rehabilitation (3)
An integrated perspective of the stages of groups, basic concepts and goals of groups with rehabilitation clients.

HRS 639 Family, Cultural and Psychological Aspects of Disability (3)
Apply theories comprehensively reviewed in terms of their utility with individuals who have disabilities and in order to enhance student preparation for rehabilitation counselor education and supervision.

HRS 640 Advanced Supervision (3)
Prerequisite: HRS 630 or equivalent. Consent of instructor. Major counseling theories are comprehensively reviewed in terms of their utility with individuals who have disabilities and in order to enhance student preparation for rehabilitation counselor education and supervision.

HRS 650 Human Resources System (3)
Addresses leadership issues in human resource placement, management and development necessary for achieving responsible change. Examines various organizational components and their interrelationship and interdependence with other organization systems.

HRS 659 Seminar in Rehabilitation Counseling Supervision (3)
An investigation of the major approaches to counseling supervision intended to increase the student's understanding of clinical supervision as it relates to rehabilitation counselor training.

HRS 692 Clinical Internship in Rehabilitation (1-18)
Prerequisites: HRS 630, HRS 694. Consent of instructor. Field experience for qualified Rehabilitation Counseling majors at approved locations. Written application to faculty internship supervisor at least one semester before registration. S/U graded. Repeatable, maximum of 18 credits.

HRS 694 Supervised Counseling in Human Services (6)
Prerequisite: HRS 630. Meets minimum of 12 hours per week. Qualified human services majors engage in counseling interviews and activities under the supervision of one or more university staff members. S/U graded.

HRS 695 Seminar in Foundations of Human Rehabilitation (3)
This graduate seminar will focus on core issues confronting the field of rehabilitation. Issues will be examined from a historical, theoretical and research perspective.

HRS 696 Advanced Rehabilitation Counseling Theories and Approaches (3)
Prerequisite: HRS 630 or equivalent. Consent of instructor. Major counseling theories are comprehensively reviewed in terms of their utility with individuals who have disabilities and in order to enhance student preparation for rehabilitation counselor education and supervision.

HRS 697 Advanced Seminar in Psychosocial Aspects of Disability (3)
Theoretical and conceptual frameworks of adjustment of various disabling conditions are comprehensively investigated. A thorough review of the research literature regarding psychosocial aspects of disability will be undertaken.

HRS 755 Supervised Practicum in College Teaching (3)
Prerequisites: HRS 630, HRS 694. Consent of instructor. Major counseling theories are comprehensively reviewed in terms of their utility with individuals who have disabilities and in order to enhance student preparation for rehabilitation counselor education and supervision.

HRS 757 Advanced Seminar in Rehabilitation Administration (3)
Prerequisites: HRS 630, HRS 694. Consent of instructor. Major counseling theories are comprehensively reviewed in terms of their utility with individuals who have disabilities and in order to enhance student preparation for rehabilitation counselor education and supervision.

HRS 758 Seminar in Collaborative Research in Human Sciences (3)
Prerequisite: HRS 630. Meets minimum of 12 hours per semester required for three credits. Repeatable, maximum of six credits.

HRS 797 Doctoral Proposal Research (1-4)
Major's only. Required of doctoral students. Students must earn 4 hours of credit towards doctoral degrees before candidacy. S/U graded. Repeatable, maximum four credits.

HRS 799 Doctoral Dissertation (1-12)
Major's only. Required of doctoral candidates. Students must earn 12 hours of dissertation credit for doctoral requirements. S/U graded. Repeatable, no limitations.

HRS 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

ID 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and appreciation for field. Approved for credit on an individual basis. S/U or letter graded. Repeatable, under different subtitles.

ID 513 Professional Renewal (1-4)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.
INTR — INTERPRETER

School of Special Education
- Contact (970) 351.2691
- www.unco.edu/cebs/sped

INTR 505 Supervision of Interpreting System (3)
This course focuses on supervision of interpreting systems. Students examine core skills shared by supervisors and analyze strategies that promote effective communication and resolve conflict in the workplace.

INTR 506 Leadership in Interpreting (3)
This course introduces the major theories and concepts of leadership and their application to the field of interpreting. It will explore the link between leadership, ethics, and values.

INTR 560 Ethics in Leadership (3)
This course addresses central issues of moral philosophy, seeking to identify and understand moral challenges peculiar to leadership. Ethical problems taking on a particular guise in leadership contexts are explored.

INTR 561 Conducting Diagnostic Assessments for ASL-English Interpreters (3)
This course provides supervisors of interpreters, lead interpreters and/or mentors with a common system, along with the tools and resources needed to effectively conduct skills-based diagnostic assessments.

INTR 580 Overview of Interpreting in the American Legal System (4)
Prerequisite: Placement by advisement only. This course introduces students to the American Judicial System including the scope and jurisdiction of federal and state courts and an overview of the civil and criminal court process.

INTR 581 Civil Litigation (3)
Prerequisite: Placement by advisement only. This course provides students with a foundation in civil law, procedures and systems that is essential to understanding the legal meaning of civil law proceedings to be interpreted.

INTR 582 Criminal Law (4)
Prerequisite: Placement by advisement only. This course examines criminal law and its associated procedures, as well as the implications of the criminal procedure and legal language on the interpreting process.

INTR 583 Internship: Skills Development for Legal Interpreters (4)
Prerequisite: Placement by advisement only. This course provides the student with a firm foundation in the tasks of interpreting legal texts and guides the practicum experience.

LIB — UNIVERSITY LIBRARIES

University Libraries
- Contact (970) 351.2671
- library.unco.edu

LIB 550 Library Research in Criminal Justice (1)
(1 lecture) Active learning experience in managing information in a dynamic research environment. Skills include identifying, retrieving, organizing, and evaluating information necessary for graduate level research in Criminology and Criminal Justice.

HSS — MEXICAN AMERICAN STUDIES

Department of Hispanic Studies
- Contact (970) 351.2811
- www.unco.edu/hispstds

MAS 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

MAS 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

MATH — MATHEMATICS

School of Mathematical Sciences
- Contact (970) 351.2820
- www.unco.edu/NHS/mathsci

MATH 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

MATH 510 Seminar in Mathematics (1)
Study discussion and student presentation of topics in mathematics. S/U graded. Repeatable, under different subtitles.

MATH 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

MATH 520 Functions and Equations (3)
Graduates only. Polynomial equations including DeMoivre's Theorem, the Fundamental Theorem of Algebra, methods of root extraction (e.g. Newton, Graffe) multiplicities, symmetric functions, matrices and determinants. Elementary computer applications.

MATH 522 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour). Repeatable, maximum concurrent enrollment is two times.

MATH 523 Modern Algebra (3)
A study of groups, rings and fields with a special emphasis on groups and fields.

MATH 525 Linear Algebra I (3)
Prerequisite: MATH 321. Vector spaces, linear transformations, matrices, eigenvalues, canonical forms, quadratic forms and other selected topics.

MATH 526 Discrete Mathematics (3)
Graduates only. Broad, deep, survey of topics in combinatorics, graph theory addressing existence, enumeration, optimization. Blend of mathematics, applications and development of mathematical reasoning skills, guided by the NCTM standards.

MATH 529 Mathematical Problem Solving (3)
Graduates only. Techniques in problem solving applied to algebra, number theory, geometry, probability, discrete mathematics, logic and calculus. A study of Polya's heuristic rules of mathematical discovery.

MATH 531 Basic Analysis I (3)
Prerequisite: MATH 233 with a grade of “C” or better (C- is not acceptable), and permission of instructor. Sequence of two courses to extend studies of calculus and analysis into the mathematical rigor and logic of analysis. Includes: real numbers, sequences, topology, limits, continuity, differentiation, series and integration.

MATH 532 Basic Analysis II (3)
Prerequisite: MATH 531. Continuation of MATH 531.

MATH 534 Continuous Mathematics (3)
Graduates only. Students will explore selected topics in mathematical analysis such as differential mappings and chaotic systems.

MATH 537 Mathematical Modeling (3)
Graduates only. Introduction to the process of mathematical modeling and its use in teaching secondary school mathematics. Emphasizes development and communication of models.
MATH 540 Introduction to Topology (3)
Point-set topology and the foundations of real analysis.

MATH 543 Modern Geometry (3)
A survey of both traditional Euclidean geometry and contemporary geometries, in which applications of geometry are integrated into the study of the mathematical structure of geometrical systems.

MATH 545 Introductory Analysis (3)
Prerequisite: MATH 540. Sequences, series, differentiation, Riemann-Stieljes Integral, series of functions, special functions and functions of several variables.

MATH 550 Applied Probability and Statistics (3)
Graduates only. Concepts include probability, counting techniques, distributions and inference (confidence intervals, point estimation, testing, ANOVA, regression, non-parametrics). The context focus is secondary level mathematics.

MATH 560 Introductory Complex Variables (3)
Prerequisite: MATH 432 or equivalent. First course in complex variables, especially for potential calculus teachers. After preliminaries, proceed directly to power series, Laurent's series, contour integration, residue theory, polynomials and rational functions.

MATH 591 Abstract Algebra and Number Theory (3)
Basic methods of problem solving in abstract algebra and number theory with applications in secondary school mathematics.

MATH 595 Topics in Mathematics (1-3)
Topics from various fields of mathematics which reflect specific interests of instructors and students. Repeatable, under different subtitles.

MATH 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

MATH 695 Special Topics (3)
Topics from various fields of mathematics, for example, algebraic topology, functional analysis, Lie groups and algebras or nonlinear analysis. Repeatable, under different subtitles.

MATH 700 Advanced Seminar (2)
Consent of Instructor. An advanced seminar in an active area of mathematical research. Content depends upon instructor's choice. Repeatable, may be taken two times, under different subtitles.

MATH 709 Abstract Algebra I (3)
Prerequisite MATH 523 or equivalent. Groups and rings and their structure. Sylow theorems. Modules. History and applications.

MATH 723 Abstract Algebra II (3)
Prerequisite MATH 709. Polynomial Noetherian rings and ideals. Fields and Galois theory. Structure of fields. History and applications.

MATH 727 Representation Theory (3)
Introduction to Representation Theory of various mathematical structures. Emphasis is on group representations.

MATH 728 Topics in Discrete Mathematics (3)
Prerequisite: MATH 778 A broad yet deep survey of current topics in combinatorics and graph theory essential for teachers K-16, including applications to probability, coding theory, sorting and matching algorithms and optimization.

MATH 730 Complex Variables (3)
Prerequisite: MATH 525; MATH 540 recommended. Analysis of functions of several variables, unifying and extending ideas from calculus and linear algebra. Includes the implicit function theorem and Stokes' Theorem.

MATH 732 Complex Variables (3)
Prerequisite: A course in complex analysis. Analytic and meromorphic functions in the complex plane. Integration, conformal mapping and advanced topics.

MATH 733 Geometric Analysis (3)
Prerequisites: MATH 525; MATH 540. Recommended. Analysis of functions of several variables, unifying and extending ideas from calculus and linear algebra. Includes the implicit function theorem and Stokes' Theorem.

MATH 734 Real Analysis (3)
Abstract spaces, Lebesgue measure, continuity, integration and differentiation theorems, Baire category.

MATH 736 Real Analysis II (3)
Prerequisite: MATH 735. Topics from real and functional analysis such as: measure theory, distributions, metric spaces and other topics of the instructor's choice.

MATH 744 Differential Geometry (3)
Prerequisite: A course in Analysis. A course in the differential geometry of curves and surfaces. Both modern and classical aspects will be covered.

MATH 764 Difference Equations and Chaos (3)
Applications of difference equations in problem solving and modeling, especially in the area of chaos.

MATH 778 Mathematical Logic (3)
The notion of proof, first order logic, set theory, ordinals, cardinals and an overview of the most important recent results in the field.

MATH 791 Number Theory (3)
Prerequisite: MATH 732. A survey of topics in arithmetic and analytic number theory, such as Euler's function, quadratic reciprocity, continued fractions and the distribution of prime numbers.

MATH 795 Special Topics (3)
Topics for various fields of mathematics, for example, algebraic topology, functional analysis, Lie groups and algebras or nonlinear analysis. Repeatable, under different subtitles.

MATH 797 Doctoral Proposal Research (1-4)
Required of all doctoral students. Four hours of credit for doctoral dissertation proposal research must be earned in partial fulfillment of requirements before admission to candidacy. Repeatable, maximum of four credits.

MATH 799 Doctoral Dissertation (1-12)
Required of all doctoral candidates. S/U grading. Repeatable, no limitations.

MED 441 Methods of Teaching Mathematics (3)
Prerequisite: EDTE 120 or EDTE 125; Co-requisite: STEP 363. For prospective teachers seeking licensure in middle grade or secondary school mathematics. Focus on teaching lessons, curriculum overviews, and applying theories of learning and teaching mathematics. Early field experience desirable.

MED 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

MED 509 Advanced Placement Program AB and BC Calculus (1-3)
Topics in calculus and pedagogical information related to establishing and maintaining a calculus advanced placement program. S/U graded. Repeatable, no limitations.

MED 510 Advanced Placement Statistics (1-3)
Topics in the content and pedagogy related to teaching and maintaining an Advanced Placement Statistics program. S/U graded. Repeatable, no limitations.

MED 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

MED 522 Topics in Mathematics Teaching at the Middle Level (1-3)
A mathematics education course for current middle school teachers. Content includes mathematics education topics appropriate for teachers of middle level mathematics. Repeatable for a maximum of 6 credits.

MED 528 Teaching of Discrete Mathematics (2)
Graduates design Methods of teaching discrete mathematics including using technology, projects, cooperative groups and the development of curriculum materials. Topics will include the teaching of existence problems, counting problems and optimization problems.
MED 534 Teaching Algebra and Trigonometry (2)
Graduates only. Current research on instruction in algebra/trigonometry; current curricular issues. Approach teaching of Algebra and Trigonometry from a conceptual and problem solving point of view.

MED 543 Teaching Geometry (2)
Graduates only. Students will develop teaching modules and models based on current theories of cognition and recommendations of professional societies.

MED 550 Teaching Applied Probability and Statistics (2)
Graduates only. Methods of teaching topics of probability and statistics including hands-on experience in collecting and analyzing data. Topics include descriptive techniques, random variables, curve fitting and use of technology.

MED 587 Technology, Manipulatives and NCTM Standards (3)
Classroom use of mathematics software, calculators, pattern blocks, attribute blocks, geoboards, geometric solids, MIRA's and others presented to teach problem solving, skills and concepts. S/U graded.

MED 588 Implementation of Mathematics Standards in Instruction (1-3)
A mathematics education internship course for current middle school teachers. Content includes mathematics and mathematics education topics appropriate for teachers of middle level mathematics, but is focused on participants' implementation and integration of program and course content in their own instruction. Repeatable for a maximum of 3 credits.

MED 595 Teaching Advanced Topics in Secondary School Mathematics (2)
Graduates only. Methods of teaching advanced mathematics topics in high school mathematics with emphasis on pedagogy, working cooperatively and developing curriculum materials for teaching such topics as vectors, fractals and transformations.

MED 599 Action Research Project (1)
Graduates only. Research a current problem in secondary mathematics education relevant to their own teaching situation. Develop goals, review relevant literature and plan the project while progressing through the program. Repeatable, may be taken three times.

MED 600 Introduction to Research in Mathematics Education (3)
For graduate students only. Examination and critique of current research in mathematics education. A focus on research design, analysis and reporting of both qualitative and quantitative research.

MED 610 Survey of Research in Mathematics Education (3)
Graduates only. The goals of this course are to synthesize and re-conceptualize past research, suggest areas of research most useful to advancing the field and provide implications for classroom practice.

MED 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour) Repeatable, maximum concurrent enrollment is two times.

MED 630 Technology in Mathematics Education (2)
Prerequisite: MED 600 or consent of instructor. Hands-on training in using new software tools for the instruction of mathematics. Current research and curriculum reform efforts concerning technology in teaching will be examined. Repeatable, may be taken twice.

MED 645 Interventions in Mathematics (3)
Students will develop knowledge and skills needed to be effective in providing interventions in mathematics for students with learning disabilities and in helping other teachers and paraprofessionals do the same.

MED 654 Seminar in College Mathematics Teaching (0-1)
Prerequisite: Graduates only. Improvement of undergraduate mathematics teaching via active student-based learning and implementation of a learning cycle of informed practice and information gathering, reflection and analysis, and planning and modified practice. S/U graded. Repeatable, no limitations.

MED 673 Teaching and Learning Mathematics on the Elementary Level (3)
Prerequisite: B.A. in mathematics or equivalent. To prepare elementary/middle school mathematics specialists. Includes mathematics review of number theory, geometry and other content, NCTM curriculum, professional and assessment standards, use of technology and manipulatives and research.

MED 674 Teaching and Learning Mathematics on the Secondary Level (3)
Prerequisite: MED 610. Graduates only. Address and evaluate specific problems in mathematics education. Allow students to examine curricular concerns, evaluation, teaching special populations and cognitive issues relating specifically to the secondary level.

MED 675 Teaching and Learning Mathematics on the Post-Secondary Level (3)
Prerequisite: MED 610 or consent of instructor. Graduates only. Address community college and undergraduate level mathematics education issues. Focus on current curriculum reform and research into learning and teaching on the post-secondary level.

MED 678 Special Topics (2-3)
No more than six hours may be applied to any one graduate degree. Prerequisites and topics announced in Schedule of Classes. Repeatable, may be taken three times, under different subtitles.

MED 682 Implementing Mathematics Curriculum (3)
(3 lecture) Graduates only. Consent of instructor. A course for developing the knowledge and skills needed to be an effective mathematics teacher leader with an emphasis on implementing a high-quality mathematics curriculum.

MED 683 Seminar in Equity and Diversity Issues in Mathematics Education (1-3)
Consent of instructor. Addresses cultural issues related to generating equity in K-12 mathematics. Each seminar focuses on a particular cultural issue, such as gender, ethnicity, race, and class. S/U graded. Repeatable under different subtitles.

MED 684 Mathematics Coaching (3)
Approval of instructor. Must be an inservice teacher or math teacher leader. Develop the knowledge and skills needed to be an effective mathematics coach.

MED 700 Cognitive Processes in Mathematics (3)
Prerequisite: MED 610. Analyze research concerning cognitive science in mathematics education. Conduct case study on cognition in mathematics.

MED 701 Quantitative Research in Mathematics Education (3)
Prerequisites: MED 610 and SRM 502 or equivalent. Learn advanced research concepts and methods that are unique in the study of educational mathematics. Includes data analysis and advanced statistical techniques.

MED 702 Qualitative Research in Mathematics Education (3)
Prerequisite: MED 610. A focus on paradigms, issues and methods of qualitative research in mathematics education. This includes critical analysis of literature and of data collected from mathematics learning environments.

MED 703 Teaching and Learning K-12 Mathematics (3)
Prerequisite: MED 610. A focus on issues relevant to working with preservice and inservice K-12 mathematics teachers, and in promoting standards-based content, curriculum, pedagogy and assessment.

MED 710 Seminar in Post-Secondary Mathematics Teaching (1)
Curricular, pedagogical and ethical issues in college mathematics teaching. Students and faculty reflect on and discuss ways to improve and reform teaching. S/U graded.
MED 750 History and Philosophy of Mathematics Education (3)
Prerequisite: MED 700 or consent of instructor. An exploration of the underpinnings of current K-16 mathematics education by examining the historical development, perspectives and schools of thought that have influenced the teaching of mathematics.

MFT — MATHEMATICS FOR TEACHING

School of Mathematical Sciences
Contact (970) 351.2820
www.unco.edu/NHS/mathsci

MFT 514 Geometry in Middle School Mathematics Teaching (3)
A combined mathematics/mathematics education course for current middle school teachers. Content includes measurement, symmetry, properties of figures, proof, and pedagogical content knowledge for teaching geometry at the middle grades.

MFT 515 Number and Operations in Middle Level Mathematics Teaching (3)
A combined mathematics/mathematics education course for current middle school teachers. Content includes number theory, arithmetic operations and their representations (algebraic and geometric), problem-solving, numerical patterns and formulas, and pedagogical content knowledge for teaching number and operations at the middle grades.

MFT 516 Algebra in Middle Level Mathematics Teaching (3)
A combined mathematics/mathematics education course for current middle school teachers. Content includes algebraic representations of patterns, numbers, and functions and pedagogical content knowledge for teaching algebra at the middle grades.

MFT 517 Data Analysis & Probability in Middle Level Mathematics Teaching (3)
A combined mathematics/mathematics education course for current middle school teachers. Content includes introductory notions of probability and basic descriptive statistics appropriate for teachers of middle level mathematics.

MUS — Music

School of Music
Contact (970) 351.2993
www.arts.unco.edu/music

MUS 100 Recitals, Concerts and Productions (6)
Weekly departmental recitals. Convocations, plus a minimum of 12 major recitals, concerts and productions each semester in residence. S/U graded. Repeatable, no limitations.
MUS 113 Music Theory I (2)
Prerequisites: Successful completion of MUS 104 or Music Theory Placement Exam or AP Test score of at least 3 on both written and aural sections. Introduction to basic diatonic harmony, phrase structure, analysis, period form and four part writing in root position. Weekly keyboard labs reinforce the coursework.

MUS 114 Aural Skills and Sight Singing I (2)
Prerequisites: Successful completion of MUS 104 or Music Theory Placement Exam or AP Test score of at least 3 on both written and aural sections. Exercises in sight singing, rhythmic reading and dictation. Sight singing of diatonic melodies, intervals, triads. Performance of rhythmic reading exercises. Ear training includes intervals, triad types, diatonic melodies, cadences and rhythmic dictation.

MUS 115 Music Theory II (2)
Prerequisites: Successful completion of both MUS 113 and MUS 114 or Music Theory Placement Exam or AP Test score of at least 4 on both written and aural sections. Introduction to harmony through four-part writing. Principles of harmonic progression, modulation, diatonic seventh chords and secondary dominants are included. Analysis of Binary and Ternary forms. Weekly keyboard labs reinforce the written material.

MUS 116 Aural Skills and Sight Singing II (2)
Prerequisites: Successful completion of both MUS 113 and MUS 114 or by placement exam or AP Test score of at least 4 on both written and aural sections. Exercises in sight singing, rhythmic reading and dictation. Sight singing of diatonic, modulating and chromatic melodies. Performance of rhythmic reading exercises which include syncopation and asymmetrical meters. Dictation includes diatonic chord progressions, diatonic and chromatic melodies, seventh chords, and rhythmic dictation with syncopation, and meters including 5/8 and 7/8.

MUS 143 Musical Styles and Context (3)
Music in its historical and cultural contexts: stylistic development and connections to the other arts. Intended for majors and musically literate non majors with a knowledge of basic music theory. (LAC, gtp)

MUS 210 Introduction to Music Education (1)
Prerequisite: EDFE 110 and MUS 113. Music majors only. For prospective teachers of music. Covers the history and present status of music in the schools, qualifications of music teachers and beginning instructional problems. Weekly observation and aiding required.

MUS 213 Music Theory III (2)
Prerequisites: Successful completion of MUS 115 and MUS 116. Introduction to chromatic harmony. Analysis of larger part forms.

MUS 214 Aural Skills and Sight Singing III (1)
Successful completion of MUS 115 and MUS 116. Ear training and sight singing, including chromatic harmonies, chromatic melodies, modulating melodies and rhythmic dictation.

MUS 215 Music Theory IV (2)
Prerequisite: Successful completion of MUS 213 and MUS 214. Introduction to musical styles and analysis techniques since 1900.

MUS 216 Aural Skills and Sight Singing IV (1)
Prerequisite: Successful completion of MUS 213 and MUS 214. Ear training and sight singing skills related to musical styles since 1900.

MUS 243 History of Music I (3)
The history of change in music from earliest times through the 16th Century to the end of the Baroque Period with emphasis on the changes in style. (LAC, gtp)

MUS 244 History of Music II (3)
A study of historical changes that took place in music in the Classic and Romantic Periods and the 20th Century. (LAC)

MUS 292 Marching Band (1)
Audition required. Open to all university students. To develop marching/playing skills by utilizing current practices in marching band formation design and special marching band musical arrangements. Repeatable, no limitations.

MUS 310 Teaching General Music in Elementary Schools (2)
Prerequisite: MUS 210, EDFE 110 or EDFE 125. A comprehensive study of the teaching of music to students in elementary school general music classes. Clinical experiences required.

MUS 311 Teaching General Music in Secondary Schools (2)
Prerequisite: MUS 310, EDFE 120 or EDFE 125. Study the role and nature of required and elective general music, arts and humanities courses in junior and senior high schools.

MUS 312 Teaching Instrumental Music in Elementary Schools (2)
Prerequisite: MUS 210, EDFE 120 or EDFE 125. Examine materials, methods and procedures for teaching instrumental music in elementary schools. In-class presentations and clinical experience required.

MUS 314 Guitar in the Classroom (1)
Music majors only or consent of instructor. Learn to play guitar, including basic folk and Classical techniques. Covers development of a guitar program in public school music curriculum.

MUS 317 Teaching Instrumental Music in Secondary Schools (2)
Required clinical experience arranged. Prerequisite: MUS 312, EDFE 120 or EDFE 125. Develops understanding of skills necessary to maintain an outstanding secondary instrumental music program.

MUS 319 Instrumental Techniques and Conducting (1)
Prerequisite: MUS 202. Develop effective hand and baton technique; learn drill and various meter patterns, tempo, style, dynamics, musical terms; study and perform musical scores, using a laboratory band and orchestra.

MUS 320 Wind Literature, Pedagogy and Conducting (2)
Prerequisite: MUS 319. Designed to continue conducting instruction begun in MUS 319, with emphasis on wind literature and rehearsal techniques appropriate for elementary through high school bands.

MUS 323 Choral Techniques and Conducting (1)
Prerequisite: MUS 202. Develop basic conducting technique as a choral musician. Study and apply meter patterns, preparatory beats, cueing and releases. Discuss tone production, dictation, blend, score preparation and rehearsal techniques.

MUS 324 Choral Conducting and Pedagogy for Elementary and Secondary Schools (2)
Prerequisite: MUS 323, EDFE 120 or EDFE 125. Continuation of MUS 323, refining conducting techniques. Examines materials, methods and procedures relevant to teaching vocal music in elementary and secondary schools.

MUS 325 Choral Methods and Literature for Elementary and Secondary Schools (1)
Prerequisite: MUS 320 or MUS 323, EDFE 120 or EDFE 125. Examine choral literature for use with elementary through high school choral organizations.

MUS 330 String Techniques (1)
The study of the problems of string playing through performance on string instruments and the study of available literature for teaching strings in preparation for establishing string classes upon graduation.

MUS 331 String Pedagogy and Literature for the Instrumental Music Teacher (2)
Prerequisite: MUS 319, MUS 330, EDFE 120 or EDFE 125. Laboratory required. Additional studies in string performance and literature are presented for the instrumental B.M.E. major.

MUS 336 Marching Band Techniques (1)
Prerequisite: EDFE 120 or EDFE 125. Designed to develop the necessary skills and knowledge needed to organize, administer, plan and teach marching band shows. Clinical experience required.

MUS 360 Voice Class (1)
Beginning instruction in singing. Primarily for the student who is not a voice major. Study will involve the elements of a basic technique for singing and beginning solo repertoire.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 361</td>
<td>Single Reed and Flute Class (1)</td>
<td>Prequisite: MUS 210. This course addresses fundamental issues in playing and teaching the clarinet, saxophone, and flute to assist music educators in the instruction of these instruments.</td>
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<tr>
<td>MUS 362</td>
<td>Double Reed Class (1)</td>
<td>Prequisite: MUS 210. This course addresses fundamental issues in playing and teaching the oboe and bassoon to assist music educators in the instruction of these instruments.</td>
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<tr>
<td>MUS 364</td>
<td>Brass and Percussion Class (2)</td>
<td>Prequisite: MUS 115. Develop a teaching knowledge of the brass and percussion instruments. Acquire sufficient playing skill for purposes of demonstration.</td>
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<tr>
<td>MUS 367</td>
<td>Materials and Techniques for Brass and Percussion (1)</td>
<td>Required of all music majors with vocal, piano and general music emphasis (B.M.E.). Covers the teaching fundamentals of brass and percussion instruments.</td>
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</tr>
<tr>
<td>MUS 410</td>
<td>Vocal Pedagogy (2)</td>
<td>An introduction to the science and teaching of singing. Study of the skeletal system, muscles involved in breathing and phonation, vocal acoustics, and learning theories, past and present.</td>
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<tr>
<td>MUS 414</td>
<td>Contemporary Issues in Music Education (2)</td>
<td>Prerequisite: MUS 310, EDFE 120 or EDFE 125. Includes issues such as assessment and the inclusion of students with handicapping conditions into the classroom.</td>
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<tr>
<td>MUS 450</td>
<td>Seminar in Student Teaching for Music Educators (1)</td>
<td>Prerequisite: EDFE 120 or EDFE 125. This seminar is designed to provide student teachers in music education with pertinent information and a support system that will aid them during their field experience.</td>
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<tr>
<td>MUS 492</td>
<td>Marching Band (1)</td>
<td>Audition required. Open to all university students. To develop marching/playing skills by utilizing current practices in marching band formation design and special marching band musical arrangements. Repeatable, no limitations.</td>
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<tr>
<td>MUS 501</td>
<td>18th Century Counterpoint (3)</td>
<td>Prerequisites: MUS 401 and MUS 402, or passing grade on the Graduate Theory Placement Exam. Study through analysis and composition of counterpoint as found in the inventon, canon, fugue and choral prelude.</td>
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<tr>
<td>MUS 502</td>
<td>Harmony and Form I (3)</td>
<td>Study 18th and early 19th century harmonic practice and tonality concepts.</td>
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<tr>
<td>MUS 503</td>
<td>Harmony and Form II (3)</td>
<td>Prequisite: MUS 502 or consent of instructor. The study of late 19th and 20th century harmonic and formal concepts.</td>
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<tr>
<td>MUS 504</td>
<td>Music Theory Pedagogy (3)</td>
<td>Become familiar with methods and materials available for teaching AP and undergraduate music theory. Receive practical experience through observation and practice teaching under the guidance of qualified instructors.</td>
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<tr>
<td>MUS 505</td>
<td>Sixteenth Century Counterpoint (3)</td>
<td>Study the style of 16th century polyphonic music, emphasizing actual period music as well as theoretical concepts. Compose two-, three- and four-voice motets.</td>
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<tr>
<td>MUS 506</td>
<td>UNC String Project Pedagogy and Supervised Teaching Practicum (1-2)</td>
<td>Consent of Director, UNC String Project. Specific, supervised string teaching assignments. Credit hours, not to exceed two per semester, dependent upon classroom clinical experience hours assigned. Repeatable, no limitations.</td>
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<tr>
<td>MUS 507</td>
<td>History of Instruments and Instrumental Practices (3)</td>
<td>A historical study of the background and development of musical instruments, with emphasis on the related performance practices.</td>
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<tr>
<td>MUS 508</td>
<td>Workshop (1-4)</td>
<td>A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.</td>
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<tr>
<td>MUS 509</td>
<td>Electronic Music (3)</td>
<td>Describe materials used in electronic music and the techniques and equipment employed to transform and organize these into compositions. Students learn to use the synthesizer.</td>
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<tr>
<td>MUS 510</td>
<td>Vocal Pedagogy (2)</td>
<td>An introduction to the science and teaching of singing. Study of the skeletal system, muscles involved in breathing and phonation, vocal acoustics, and learning theories, past and present.</td>
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<tr>
<td>MUS 511</td>
<td>Wind Band Literature and Techniques (2)</td>
<td>A survey of the origins, development and historical significance of the wind band, including an overview of its literature, instrumentation and specific considerations for conducting this repertoire.</td>
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<tr>
<td>MUS 515</td>
<td>Keyboard Literature I (2)</td>
<td>Sightreading at Level III or above required. The study of keyboard music from its earliest beginnings through the works of Frederic Chopin and Robert Schumann. Offered every other year.</td>
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<tr>
<td>MUS 516</td>
<td>Keyboard Literature II (2)</td>
<td>Sightreading at Level III or above required. Concentrate on keyboard works from Franz Liszt and Johannes Brahms through the twentieth century. Offered every other year.</td>
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<tr>
<td>MUS 517</td>
<td>Comprehensive String Pedagogy for String Players (3)</td>
<td>Graduate majors in violin, viola, cello or double bass (including graduate music education students) will enroll in this course upon consultation with their advisor. Pedagogy and practical application of technical literature from tuning through bowing for bow instruments (violin, viola, cello and bass). Teaching practicum is an integral part of the course.</td>
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<tr>
<td>MUS 519</td>
<td>Foundations of Music Education (3)</td>
<td>Study historical, philosophical and psychological issues and principles that provide the context for contemporary music education.</td>
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<tr>
<td>MUS 526</td>
<td>Jazz Rhythm Section Workshop (1)</td>
<td>A listening workshop in jazz and commercial music for all instrumentalists. Topical will include important players, group communication, performance styles and classic rhythm sections.</td>
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<tr>
<td>MUS 533</td>
<td>Curriculum Trends in Music Education (3)</td>
<td>Study curriculum trends in music education, including methods of teaching, curriculum development and aesthetic education.</td>
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<tr>
<td>MUS 534</td>
<td>Acting for Singers (2)</td>
<td>Instruction in the special needs of the singer/actor: staging of arias, improvisation, freeing the voice through movement.</td>
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<tr>
<td>MUS 536</td>
<td>German Art Song (3)</td>
<td>An introduction to the origins of the art song form with in-depth study of the German art song from its historical beginnings through the present day.</td>
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<tr>
<td>MUS 538</td>
<td>French/Italian Art Song (2)</td>
<td>Course in the performance of 19th and 20th century French and Italian Art Song with particular emphasis upon style, technical requirements and diction.</td>
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</table>
MUS 539 British/American Art Song (2)
In-depth study of British and American art song. Emphasis will be on research and performance of 20th century materials.

MUS 540 Techniques of Vocal Coaching (2)
Prerequisite: Consent of Instructor. Acquaint students with needs for collaborative performance through the study of listening, rhythm, sightreading, technique and 4-hand repertoire. Class performances required. Repeatable, no limitations.

MUS 541 Chamber Music Literature for Keyboard (2)
Prerequisite: Consent of Instructor. This course will acquaint students with literature for keyboard with other instruments, both in duos and larger ensembles.

MUS 542 Jazz Pedagogy (2)
Graduate and qualified senior music majors only. Takes a pedagogical approach to the analysis of jazz ensemble scores, rehearsal techniques and rhythm sections. Looks at concert planning and audience building.

MUS 543 Jazz Program Administration, Planning and Development (2)
Graduate students and qualified senior Music majors. Deals with public relations, grant writing, promotion, programming, recruiting and other aspects of the development of a Jazz Studies Program. Learn planning and follow-through of the annual Jazz Festival.

MUS 544 Seminar in Jazz History (3)
An in-depth study of the history, historiography, and literature of jazz from its precursors to the present. Research, listening, and critical writing skills are stressed.

MUS 546 Arranging (2)
Prerequisite: MUS 218 or consent of instructor. Fundamental considerations in arranging music for small instrumental jazz ensembles and vocal jazz groups. Stylistic elements of melody, harmony, rhythm, texture, and form. Details of notation, score preparation and layout.

MUS 547 Advanced Arranging (2)
Prerequisite: MUS 546 or consent of instructor. Discussion of common techniques used by great arrangers. Prepares students to write arrangements for large jazz ensemble and studio orchestra.

MUS 548 Accompanying and Coaching I (2)
Consent of instructor. Acquaint students with necessary skills for collaborative performance through the study of listening, rhythm, sightreading, technique and 4-hand repertoire. Class performances required. Repeatable, no limitations.

MUS 549 Accompanying and Coaching II (2)
Prerequisite: MUS 348/MUS 548 or consent of instructor. Acquaint students with skills needed for collaborative performance through score reduction and discussion, listening and performance of song and instrumental literature. Class performances required. Repeatable, no limitations.

MUS 550 Score Reading and Analysis (1)
Analysis of wind/orchestral/choral literature. Relates analysis techniques to preparation and performance. Literature studied varies from semester to semester. Repeatable, may be taken four times.

MUS 551 Individual Performance in Conducting (2)
Study of advanced problems in instrumental conducting. Regular conducting experience with University ensembles is an integral part of the course. Repeatable, may be taken four times.

MUS 552 Principles of Piano Teaching I (2)
Compare current piano methods. Study technical and musical problems with a beginning student. Offered every other year.

MUS 553 Principles of Piano Teaching II (2)
Prerequisite: MUS 352/MUS 552 or consent or instructor. A study of the methods of teaching musicianship and pianistic skills. Observe private and group lessons. Supervised teaching internship required. Offered every other year.

MUS 554 Pedagogical Approaches to Keyboard Literature I (2)
Evaluate various approaches to the study of keyboard literature through student participation in teaching and performing. Repeatable, no limitations.

MUS 555 Seminar in Jazz Composition (2)
Prerequisite: Consent of Instructor. Examination of compositional techniques in jazz styles. Analysis of works by important representative songwriters and composers.

MUS 556 Advanced Arranging (2)
Prerequisite: MUS 218 or consent of instructor. Fundamental considerations in arranging music for small instrumental jazz ensembles and vocal jazz groups. Stylistic elements of melody, harmony, rhythm, texture, and form. Details of notation, score preparation and layout.

MUS 557 Advanced Arranging (2)
Prerequisite: MUS 546 or consent of instructor. Discussion of common techniques used by great arrangers. Prepares students to write arrangements for large jazz ensemble and studio orchestra.

MUS 558 Choral Literature and Techniques (2)
Examines selected choral orchestral works from the Baroque to the present. Includes specific study of conducting considerations for this repertoire.

MUS 559 Opera History and Literature (2)
Examine the historical significance and literature of the opera form from its precursors through the present time.

MUS 560 Opera Directing Seminar (1-3)
Prerequisites: Previous opera or music theatre performance experience. Consent of instructor. Study repertoire, floor plans, stage properties, hand properties, costume needs, make-up needs, and staging. Repeatable, no limitations.

MUS 561 Psychological and Learning (3)
Introduces concepts of psychology in the acquisition and development of musical cognition, affect, and physiological response. Combines study of empirical research and practical approaches for use in the Classroom.

MUS 562 Psychology of Music Teaching and Learning (3)
Introduces concepts of psychology in the acquisition and development of musical cognition, affect, and physiological response. Combines study of empirical research and practical approaches for use in the Classroom.

MUS 563 Latin Jazz Ensemble (1)
Audition required. The Latin Jazz Ensemble studies and performs music exclusively from the Latin Jazz tradition. The repertoire reflects both Afro-Cuban and Brazilian influences fused with jazz performance practices. Repeatable with no limitations.
MUS 620 Jazz Guitar Ensemble (1)  
Audition required. Comprised of several guitarists and a rhythm section, the Jazz Guitar Ensemble studies and performs music from diverse jazz styles arranged for this specific combination of instruments. Repeatable with no limitations.

MUS 621 Small Jazz Ensembles (1)  
Open to any student by audition. Groups consist of rhythm section plus 3 or 4 horns. Groups are listed in Music degree section of this Catalog. Repeatable, no limitations.

MUS 622 Directed Studies in Music (1-4)  
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

MUS 623 Individual Studies in Effective Teaching (1-3)  
Designed according to candidate’s primary emphasis and satisfies the Seminar in Teaching (discipline) required of all D.A. candidates in Music. Repeatable, maximum of three credits.

MUS 624 Vocal Jazz Ensembles (1)  
Audition required. Graduate student only. Each ensemble limited to 20 voices: 4 sopranos, 4 altos, 4 tenors, 4 baritons, 4 bass-cor or 4 baritons, plus rhythm section and horns. Repeatable, no limitations.

MUS 625 Jazz Ensembles (1)  
Audition required. Instrumentation is brass, woodwind and rhythm. Concentrate on jazz idiom music: show and dance music and concert jazz. Receive thorough preparation for teaching at both secondary and college levels. Repeatable, no limitations.

MUS 626 Orchestral Excerpts (1)  
Consent of instructor. Emphasis is on professional level performance of standard orchestral literature at the graduate level. Repeatable, no limitations.

MUS 628 Collegium Musicum (1)  
Audition required. Majors only. This performing group specializes in historically informed performance of early music. Historical treatises, appropriate ornamentation and improvisation and pre-19th century styles are the focus of the class. Repeatable, no limitations.

MUS 630 Small Ensembles and Chamber Music (1)  
Small chamber groups that rehearse regularly and are coached by a faculty member. Repeatable, no limitations.

MUS 636 Individual Performance in Jazz (2-4)  
Consent of Instructor. Private instruction in performance practice, technical study, and literature relevant to jazz. Repeatable, no limitations.

MUS 637 Individual Instruction in Jazz Composition (2-4)  
Consent of Instructor. Individual instruction in Jazz Composition. Repeatable, no limitations.

MUS 643 Seminar: Medieval Music (3)  
A study of musical style in its historical, theoretical and practical aspects during the Middle Ages.

MUS 644 Seminar: Music in the Renaissance (3)  
A cultural and historical examination of music and musical style during the 15th and 16th centuries. Flemish composers, the Madrigal, the Venetian School and similar subjects will receive special attention.

MUS 645 Seminar: The Baroque Period (3)  
Music from 1600 to 1750. Investigates opera from Florentine beginnings through Venetian, Neapolitan and French styles to 1750; growth of chamber, orchestral and solo instrumental music, and religious vocal music.

MUS 646 Seminar: The Classic Period (3)  
Historical and cultural influences bearing upon emergence of 18th century classicism in music. The composer, representative works, forms, styles and media of the Classic era.

MUS 647 Seminar: The Romantic Period (3)  
Representative composers, musical styles, works, related literary movements, aesthetic theories and musical criticism of the period will be researched and discussed.

MUS 648 Seminar: Music Since 1900 (3)  
Study of major trends in this music, accompanied by investigation into their social and cultural bases. Technical aspects of this music are more thoroughly investigated in the course, MUS 503.

MUS 649 Music History Pedagogy (3)  
Surveys philosophical approaches and methods to the teaching of Music Appreciation, Music History, and more specialized courses.

MUS 650 Seminar: Choral Music (2)  
A seminar to allow discussion of a variety of subjects related to choral literature. Individual projects will be assigned, calling for creative research.

MUS 653 Vocal Literature and Styles (3)  
A study of the stylistic, aesthetic and repertorial aspects of vocal music, including opera and choral music, through the various historical periods in music.

MUS 656 UNC European Summer Opera Program (1-6)  
Audition Required. Practical experience in the production and performance of a complete operatic works in professional productions in Europe. Techniques of acting, singing, character analysis and stage direction will be studied. Repeatable, no limitations.

MUS 657 Instrumental Literature and Styles (3)  
A study of the stylistic, aesthetic and repertorial aspects of instrumental music, including orchestral and chamber music, through the various historical periods in music.

MUS 658 Brass Pedagogy (3)  
Prerequisite: MUS 346 or consent of instructor. In-depth study of brass materials and performance techniques. Examines brass teaching problems encountered by teachers at the K-12 and college levels.

MUS 661 Percussion Pedagogy (2)  
Prerequisite: MUS 346 or consent of instructor. Explore advanced techniques, methods and materials related to all the percussion instruments.

MUS 662 Woodwind Pedagogy (2)  
Prerequisites: MUS 361, MUS 362 or consent of instructor. Majors only. In-depth study of teaching material and techniques related to the flute, clarinet, saxophone, oboe and bassoon.

MUS 663 Trumpet Literature and Pedagogy (2)  
Majors only. In depth study of literature and pedagogical techniques as related to the trumpet.

MUS 665 Individual Performance in Collaborative Piano (2-4)  
Prerequisites: MUS 348, MUS 349 and MUS 465 or consent of instructor. In-depth study of repertoire and refinement of skills for the collaborative pianist. Repeatable, no limitations.

MUS 666 Madrigal Singers (1)  
Membership in the Concert Choir required or by special permission. The UNC Madrigal Singers is a highly select group of 16 to 20 performers. The group performs a wide variety of choral chamber works in concerts throughout the year. Repeatable, no limitations.

MUS 667 University Symphony Orchestra (1-3)  

MUS 668 Chamber Orchestra (1)  
Audition required. Comprised of outstanding strings Selected winds. Performs chamber orchestra literature from Baroque to the present. Presents concerts on and off campus. Repeatable, no limitations.

MUS 670 Individual Performance in Voice (2-4)  
Consent of instructor. Repeatable, no limitations.

MUS 671 Individual Performance in Piano (2-4)  
Consent of instructor. Repeatable, no limitations.

MUS 673 Individual Performance in Strings, Harp, or Guitar (2-4)  
Consent of instructor. Repeatable, no limitations.

MUS 674 Individual Performance in Woodwinds (2-4)  
Consent of instructor. Repeatable, no limitations.

MUS 675 Individual Performance in Brass or Percussion (2-4)  
Consent of instructor. Repeatable, no limitations.
MUS 677 Individual Instruction in Composition (2-4)
Consent of instructor. Repeatable, no limitations.

MUS 680 Mixed Concert Choir (1)
Audition required. Limited to approximately 60-65 singers. Open to all students. The Choir performs a wide range of literature: classics to contemporary works. Widely recognized for its excellence, the Concert Choir performs concerts on campus and tours annually. Repeatable, no limitations.

MUS 681 Women’s Glee Club (1)
Audition required. Open to all female students. Performs on campus and joins with the Concert Choir in large masterworks with orchestra. Repeatable, no limitations.

MUS 682 University Singers (1)
Audition required. Membership in Concert Choir required or consent of instructor. This select group of 25 singers performs an extremely varied repertoire from Renaissance motets to contemporary works. Repeatable, no limitations.

MUS 684 Men’s Glee Club (1)
Audition required. Open to all male students. Performs on campus and in the community. Sings a wide variety of literature. Repeatable, no limitations.

MUS 685 Performance in Opera Theatre (1-12)
Audition required. Practical experience in the production and performance of a complete operatic work. Techniques of acting, singing, character analysis and stage direction will be studied. Repeatable, no limitations.

MUS 686 Scene Studies in Opera (1-3)
Audition required. Studying techniques of acting, singing, character analysis and stage deportment through the staging and performing of selected opera scenes and arias. Repeatable, no limitations.

MUS 688 Concert Band (1-3)
Audition required. Comprised of music majors and students from other disciplines. Members perform a wide variety of interesting literature selected from standard and current repertoire. Repeatable, no limitations.

MUS 689 University Brass Choir (1)

MUS 690 Wind Ensemble (1-3)
Audition required. Comprised of the most outstanding wind and percussion majors in the School of Music. The ensemble performs a repertoire of works requiring from 8 to 35 performers. Repeatable, no limitations.

MUS 693 Practicum in Music (1-4)
Open only by invitation to resident graduate students. Supervised professional activity for dissertation and field studies; survey critical problems in music; prepare research and proposal outlines. Repeatable, no limitations.

MUS 695 Special Topics in Music (1-4)
A seminar covering areas in performance, research, education, history and theory that are of concern to the contemporary graduate student. Topics will vary according to student interest and needs. Repeatable, under different subtitles.

MUS 699 Thesis (1-6)

MUS 700 Introduction to Doctoral Research (3)
Analytical studies in music writing and research techniques for dissertation and field studies; survey critical problems in music; prepare research and proposal outlines. Repeatable, maximum six credits.

MUS 794 Supervised Practicum in College Teaching (2)
Observe and practice college teaching under supervision and as a basis for analysis of learning experiences. Repeatable, maximum of four credits.

MUS 797 Doctoral Proposal Research (1-4)
Required of all doctoral students. Repeatable, maximum of four credits.

MUS 799 Doctoral Dissertation (1-12)
Required of all doctoral candidates. Repeatable, no limitations.

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NURS — Nursing

School of Nursing
- Contact (970) 351.2293
- www.unco.edu/nhs/nursing

NURS 307 Leadership and Nursing Issues (3)
Involves comprehensive investigation and analysis of health care issues and leadership theory and skills which are imperative in today's health care environment.

NURS 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

NURS 510 Concepts in Transcultural Nursing (3)
For seniors, post-B.S. or M.S. in nursing students. Summers only. Focuses on transcultural nursing and cultural assessment for the purpose of providing culturally congruent and competent nursing care. Describes culture care beliefs, values and practices of specific cultures.

NURS 511 Advanced Transcultural Nursing and Research (3)
Prerequisites: NURS 510. Summers only. The use of ethnonursing, ethnography and other qualitative research methods to generate and analyze cultural differences and similarities in care, health beliefs, values and practice of various cultures.

NURS 512 Transcultural Nursing Field Experience (3)
Pre or Co-requisite: NURS 511. Summers only. The application of ethnonursing research methodology to analyze differences and similarities within a cultural experience as determined by the student and faculty. S/U graded.

NURS 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general knowledge or methodologies. S/U or letter grades. Repeatable, under different subtitles.

NURS 520 Clinical Instruction in Nursing (3)
Admission to the Master's Program required. Introduction to theoretical foundations for advanced nursing practice. Application of theory to clinical nursing practice and to nursing education. Emphasis on the development, application and critique of nursing models.

NURS 600 Nursing Theory (3)
Admission to Master's Program required. Credit by examination only. Coverage of selected topics in nursing theory. Emphasis on application of theoretical concepts to clinical nursing practice.

NURS 602 Management of Chronically Ill Populations I (4)
Admission to master's program required. The impact of chronic illness across the lifespan is examined using a conceptual approach. Health promotion and illness management are emphasized through case management care delivery. 45 practicum hours required.

NURS 604 Management of Chronically Ill Populations II (4)
Application of the nursing process and case management is examined in the development of health promotion and illness management strategies for the chronically ill adult and child. 45 practicum hours required.
NURS 605 Nursing Research (3)
Advanced research concepts, methodology, and application of descriptive and inferential statistical components to data analysis. Critique selected research projects to determine relevance to nursing practice and contribution to theory development.

NURS 610 Health Assessment (3)
(2 lecture, 3 practicum) Forty-five hours applied practicum arranged. Emphasis in health history taking, physical assessment and interviewing of individuals across the life span.

NURS 612 Advanced Pharmacology (4)
Examine clinical pharmacokinetics and pharmacotherapeutics. Focus on selected drug groups and their safe and appropriate utilization in primary care practice.

NURS 614 Advanced Pathophysiology (3)
Focus on pathophysiology, symptomology and etiology of commonly encountered acute and chronic clinical entities of children and adults.

NURS 615 Advanced Seminar in Transcultural Theories and Methods (3)
Consent of Instructor. This course is a survey of theories and research methods used in transcultural health care and other disciplines.

NURS 618 Epidemiology in Advanced Nursing Practice (3)
Majors only. Principles of epidemiology and understanding of biostatistics will be applied to population management of disease and intervention strategies.

NURS 622 Directed Studies (1-3)
Graduate students only. Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

NURS 628 Information Technology in Health Care (3)
Majors only. Use and application of computerized systems to clinical decision strategies for advanced practice nurses in the areas of quality management.

NURS 630 Teaching Strategies in Nursing (3)
Practice teaching of nursing students, practicing nurses and/or clients. Analyze teaching strategies in academic and clinical settings.

NURS 638 Concepts in Advanced Evidence-Based Practice (3)
(2 lecture, 3 practicum) Forty-five hours applied practicum arranged. Majors only. Emphasis is on the systemic evaluation and use of current best evidence to make decisions about clinical practice and health care systems.

NURS 640 Health Care of Families I (4)
(2 lecture, 6 practicum) Ninety hours applied practicum arranged. Majors only. Application of theoretical and research based developmental approaches to primary health care of families with particular emphasis on childhood/adolescence.

NURS 645 Health Care of Families II (4)
(2 lecture, 6 practicum) Ninety hours applied practicum arranged. Majors only. Application of theoretical and research based developmental approaches to primary health care of families with particular emphasis on women's health and adult episodic care.

NURS 650 Health Care of Families III (4)
(2 lecture, 6 practicum) Ninety hours applied practicum arranged. Majors only. Application of theoretical and research based developmental approaches to primary health care of families with particular emphasis on chronically ill and older adults and psychosocial adjustment disorders.

NURS 658 Applied Nursing Genomics (3)
Prerequisite: NURS 614. Majors only. A genomics focus on concepts of prevention, screening, diagnostics, prognostics, selection of treatment, and monitoring of treatment effectiveness for individuals and aggregates within cultural and ethical care contexts.

NURS 660 Nursing Education Seminar (4)
Synthesis of concepts from nursing theory, research and education courses. Experience with curriculum development and analysis. 45 practicum hours required.

NURS 665 Seminar Topics in Chronic Illness (3)
Majors only or permission of instructor. Engage in a course of study designed to investigate a special topic in chronic illness. Emphasis may be in a specific area or applicable across chronic illnesses/conditions.

NURS 668 Population Centered Health Care (3)
(2 lecture, 3 practicum) Forty-five hours applied practicum arranged. Prerequisite: NURS 618. Majors only. Examines perspectives of population based health care across the life span from a community and global perspective.

NURS 678 Professional Practice and Healthcare Finance Seminar (3)
(2 lecture, 3 practicum) Forty-five hours applied practicum arranged. Majors only. Comprehensive economic investigation of health planning, organization, personnel, payment systems and care cost effectiveness in health care delivery systems.

NURS 680 Advanced Practice Role Practicum (1-9)
Majors only. Final clinical experience provides students an opportunity to practice advanced roles intervention in underserved and/or rural areas. S/U graded. Repeatable, maximum of 9 credits for a total of 405 practicum hours.

NURS 682 DNP Practicum (3-7)

NURS 688 Advanced Nursing Leadership in Health Care Systems (3)
(2 lecture, 3 practicum) Forty-five hours applied practicum arranged. Majors only. Analyzes the structure and organization of health care delivery systems including population-based, acute and ambulatory health care. The roles of the DNP in organizational and systems policy are addressed.

NURS 690 Advanced Professional Role (2)
Majors only. Advanced practice role development in health maintenance and illness management is examined from several perspectives.

NURS 691 Applied Nursing Research (3)
Majors only. Application of concepts from graduate research in a completed scholarly project, under direction of a graduate faculty member.

NURS 693 Advanced Academic Nursing Roles (3)
The emphasis of this course is on direct responsibility/accountability for experience in the role of academic clinical and didactic teaching or administrative roles. 45 practicum hours required.

NURS 696 DNP Capstone Project (2-6)
Terminal program course. All other courses should be taken before or concurrently. Majors only. Capstone project reflecting knowledge and synthesis of evidence based practice in advanced nursing health care. S/U graded. Repeatable, maximum of 6 credits.

NURS 699 Thesis (1-6)
Terminal program course. All other courses should be taken before or concurrently. Guided research project that demonstrates evidence of original thought as well as advanced knowledge of the research process. S/U graded. Repeatable, no limitations.

NURS 700 Advanced Nursing Theory (3)
Majors only or consent of instructor. The focus of this course is nursing knowledge development and the underpinnings of nursing science, practice and education.
NURS 702 Advanced Concepts of Vulnerable Underserved Populations (3)
Majors only or consent of instructor. Examines contextual contributors to
development of vulnerable populations and public response. Implications for
nursing research and practice are explored.

NURS 707 Leadership in Health Policy (3)
Majors only or consent of instructor. Integrates theory and empirical research
about leadership and health policy. Participates in the policy development
process.

NURS 710 Evaluation in Nursing Education (3)
Majors only. Emphasis on data collection needs assessment, instrument
analysis and evaluation in nursing education.

NURS 730 The Scholarship of Teaching and Practice in Nursing Education (2)
Majors only. This course is designed to prepare the learner for scholarship in
nursing education, publication, presentation and grant writing activities.

NURS 740 Intensive Teaching Practicum (3)
Majors only or consent of instructor. Discussion and guided experiences in
teaching of nursing, including planning, developing, implementing and
evaluating classroom and clinical instruction.

NURS 760 Advanced Nursing Curriculum Design (3)
Majors only. Examines historical, philosophical, social-cultural, political,
economic, and professional issues that impact curriculum in nursing education.
The focus is on design and evaluation of a nursing curriculum.

NURS 780 The Professorial Role in Nursing Education (3)
Prerequisite: Licensed RN and accepted into doctoral program. Involves
comprehensive investigation of the academic nursing role in higher
education relative to administration, student issues, program requirements and faculty expectations.

NURS 790 Research Colloquium (2)
Seminar exploring the nature of doctoral research in nursing and nursing
scholarship. Possible dissertation topics are explored.

NURS 797 Doctoral Proposal Research (1-4)
Majors only. All doctoral students must earn 12 hours as partial fulfillment of
requirements for the doctorate. Explores dissertation research problems,
theoretical framework, methodology and data analysis methods to launch

NURS 799 Doctoral Dissertation (1-12)
Majors only. All doctoral students must earn 12 hours as partial fulfillment of
requirements for the doctorate. Dissertation must be approved by and
defended to the dissertation committee. S/U graded. Repeatable, maximum of 12 credits.

NURS 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

OCN — OCEANOGRAPHY

School of Earth Sciences and Physics
• Contact (970) 351.2647
• www.unco.edu/nhs/esp

OCN 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum 12 credits.

PHYS — PHYSICS

School of Earth Sciences and Physics
• Contact (970) 351.2961
• www.unco.edu/nhs/esp

PHYS 508 Physics Workshop (1-4)
A physics subject matter workshop course designed to improve the physics content background of teachers. Repeatable, under different subtitles.

PHYS 509 Advanced Placement Institute in Physics (2)
Consent of instructor. Topics in physics content and pedagogy appropriate to the establishment, development and maintenance of an advanced placement program in physics. S/U graded. Repeatable, no limitations.

PSY — PSYCHOLOGY

School of Psychological Sciences
• Contact (970) 351.2957
• www.unco.edu/cebs/psychsci

PSY 347 Educational Psychology for Elementary Teachers (3)
Prerequisites: IDLA major and cumulative GPA of at least 2.75. Study the relationships between theory, research, and practice in learning, memory, child development, motivation, and educational assessment for elementary classroom settings.

PSY 500 Educational Psychology for Teachers (3)
This course is designed to be an in-depth overview of research and theory on
learning and cognition, social and personal development, individual
differences, motivation and assessment of student learning. Particular attention
will be given to the application of these topics to classroom settings.

PSY 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

PSY 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline and knowledge or methodologies. S/U or letter graded. Repeatable under different subtitles.

PSY 530 Life Span Developmental Psychology (3)
Human growth and development from conception through senescence,
 focusing on cognitive, affective, social and psychomotor development throughout the life span.

PSY 540 Theories and Principles of Learning (3)
A survey of classical and contemporary learning theories and related to human
cognition. Topics include the study of learning processes, memory and higher
cognitive functions.

PSY 550 Cognitive Development (3)
Examine classic and contemporary research and theory on cognitive
development of children, and specific topics such as attention, memory, and
intelligence. Undergraduates may not register without permission of
instructor.

PSY 575 Educational Assessment (3)
The course will provide educators with the skills needed to evaluate, explain,
and apply assessment and testing data to inform classroom instruction and
education decisions.

PSY 580 Psychopharmacology (3)
Intended to educate clinicians about the various medications that are often used
in the treatment of mental illness and the mechanisms that allow them to work.

PSY 582 Behavioral Genetics (3)
Prerequisite: PSY 120. Majors only. Juniors and above. 3.0 GPA and above.
Introductory genetics course recommended. Consider genetic basis of
behavior in humans and animals; contemporary issues include heritability,
cognitive disabilities, psychopathology, personality disorders, and
pharmacogenomics.
PSY 590 Seminar in History and Systems (3)
Philosophical perspectives and major theories and systems are reviewed as they contributed to the development of contemporary psychology. Course required for state psychology board licensing eligibility.

PSY 595 Special Topics in Psychology (1-3)
Scheduled on an irregular basis to explore special areas in psychology and carries a subtitle for each offering. Check department office for topics currently planned. Repeatable, under different subtitles.

PSY 600 Graduate Research Methodology (3)
Graduates only. Majors only. Introduction to basic concepts in psychology research, including experimental design, non-experimental methods, statistical analysis and research vs. ethical responsibilities. Overview of ongoing research in Psychology Department.

PSY 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

PSY 625 Principles of Neuropsychology (3)

PSY 626 Introduction to Neuropsychological Assessment (3)

PSY 627 Psychometrics (3)
Survey of psychometric considerations within areas of personality, psychopathology, intelligence, neuropsychology. Topics include: domain theory test construction, test operating characteristics, multivariate methods within psychometrics. Items, exemplars across major areas.

PSY 630 Advanced Child and Adolescent Psychology (3)
Prerequisite: EPSY 530 or equivalent. Physical, social and emotional development of children from conception through puberty, stressing normal development and major development theories.

PSY 635 Individual Differences in Cognition (3)
Prerequisite: PSY 540 or equivalent. Examine individual differences between learners from a cognitive viewpoint. Review verbal, mathematical and spatial abilities, cognitive styles, problem solving and gender and cultural differences. Seminar format.

PSY 640 Cultural Issues in Educational Psychology (3)
This course covers research and theory on culture and its relationships with and applications to areas of educational psychology including development, cognition, assessment and school achievement, motivation, and individual differences.

PSY 644 Motivation in Education (3)
Students will investigate what it means to be properly motivated, why individuals often develop problematic motivational patterns, and how proper motivation can be fostered.

PSY 634 Seminar in College Teaching (3)
Practices, issues and research in college teaching. Instructional models and methods, course planning, cognition, testing and grading, student-teacher interaction and ethics.

PSY 661 Trends and Issues in Educational Psychology (3)
Majors only. Examines professional, philosophical, theoretical issues and trends across the discipline. Students practice and receive feedback regarding written and oral communication skills.

PSY 663 Apprenticeship (1-3)
Consent of instructor. Work with faculty member on professional endeavors such as research, writing, course planning or public service. Requires 3 hours per week for each credit. S/U graded. Repeatable, maximum of nine credits.

PSY 664 Advanced Social Psychology (3)
Examine major areas of social psychology e.g., aggression, altruism, cooperation, attitude change, and impression management; learn about observation and other data-collection techniques. Possible laboratory observations.

PSY 674 Measurement I: Educational Testing (3)
Prerequisite: SRM 600. Construction and evaluation of tests and other measures. Topics include score and norm interpretation, reliability and validity. Item construction and analysis, rating scales and questionnaires.

PSY 675 Measurement II: Advanced Techniques (3)
Prerequisite: EPSY 674. Classical and modern measurement theory and methods. Derivations of reliability and validity formulae, test bias, item response theory, logistic models, score equating, standards, individual prediction and classification.

PSY 680 Neuroscience Seminar (3)
Graduates only. Reviews current theories and research regarding neurophysiological underpinnings of typical and atypical human behavior. Topics include: neuroscientific investigation of behavioral domains, cognitive models, gene contributions, and developmental influences.

PSY 681 Cognition and Instruction I (3)
An introductory overview of various theoretical and applied perspectives on cognition and instruction, including behavioral, cognitive, meaningful learning, and situated cognition. Includes significant classroom-based observational and clinical interview experiences.

PSY 682 Cognition and Instruction II (3)
Prerequisite: EPSY 681 or EPSY 540. Assumes basic knowledge of cognitive and instructional theory. Focuses on research in development, cognition and instruction, subject matter, and social and cultural contexts of learning.

PSY 683 Research Issues in Cognition and Development (3)
Course will consist of an overview of a range of formal to semi-formal educational research models. It includes philosophical ideas and assumptions, qualitative quantitative research models and ethical issues.

PSY 684 Advanced Seminar in Human Development (3)
Prerequisite: EPSY 530. For Graduate students wishing to develop advanced competency. Periodically, seminar may focus on topic reflecting instructor's interest area or on developing a student's inquiry. Repeatable, maximum of nine credits.

PSY 685 Advanced Seminar in Learning and Cognition (3)
Prerequisite: EPSY 540. Pursue original research into learning and cognitive processes under the guidance of a faculty member. Arranged to reflect faculty and students' interests. Repeatable, maximum of nine credits.

PSY 686 Advanced Seminar in Measurement and Assessment (3)
For graduate students wishing to develop a competency in psychological and educational measurement. The seminar will focus on an advanced topic in contemporary measurement and assessment. Repeatable, maximum of nine credits.

PSY 692 Internship in Educational Psychology (1-9)
Consent of instructor. Full or part-time assignment in a field-based setting under supervision. Students work a minimum of 3 hours per week for each hour of credit. S/U graded. Repeatable, maximum of 18 credits.

PSY 693 Research Practicum (1-3)
Each student will collaborate in research with a psychology professor. The research topic and nature of involvement are determined by consultation between student and professor. S/U graded.
PSY 694 Practicum (3)
Consent of instructor. Majors only. Supervised experience in diagnostics of neuropsychological deficits. Individual and group supervision emphasizing behavioral interview and psychometric data. S/U graded.

PSY 695 Special Topics in Educational Psychology (1-3)
Specialized topics or contemporary issues. Topics vary. Repeatable, maximum of two times, under different subtitles.

PSY 697 Master's Project in Psychology (3-6)
Majors only. Consent of advisor. For Master's students in psychology as an approved alternative to the written comprehensive examination. Students will enroll with major advisor to develop research proposal, conduct project and report results. S/U graded. Repeatable, maximum of six credits.

PSY 699 Thesis (1-6)
Recommended in place of M.A. project, especially for students applying to doctoral programs. S/U graded. Repeatable, no limitations.

PSY 797 Doctoral Proposal Research (1-4)
Doctoral students must earn 4 hours as partial fulfillment of requirements for the doctorate. May be taken with the Graduate School regarding appropriate procedures and formats. S/U graded. Repeatable, maximum of four credits.

PSY 799 Doctoral Dissertation (1-12)
Must earn 12 hours as partial fulfillment of requirements for the doctorate. Dissertation must be approved by and defended before the dissertation committee. S/U graded. Repeatable, no limitations.

PSY 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

SCED — SCIENCE EDUCATION

School of Biological Sciences
- Contact (970) 351.2921
- www.unco.edu/nhs/biology

Department of Chemistry and Biochemistry
- Contact (970) 351.2559
- www.unco.edu/nhs/chemistry

School of Earth Sciences and Physics
- Contact (970) 351.2961
- www.unco.edu/nhs/esp

SCED 441 Methods of Teaching Secondary School Science (3)
Prerequisite: EDFE 120 or EDFE 125. Consider curriculum and classroom organization, testing and evaluation, procedures and materials, relationship of subject area to total secondary program, emphasizing teaching techniques.

SCED 513 Professional Renewal (1-12)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

SCED 530 Laboratory, Field, and Studio Safety (1)
Emphasizes formation of a “safety culture” in science and/or art. Federal and state regulations are covered. Course product is a safety manual for the laboratory or studio.

SCED 535 Context-based Conceptual Chemistry (3)
(3 lecture, 2 laboratory) Prerequisites: CHEM 111 and CHEM 112 or consent of instructor. The emphasis of this course is on how to teach chemistry concepts within the context of the kitchen, medicine cabinet, household cleaning, and the garden. No credit for Chemistry M.S. or Chemical Education Ph.D.

SCED 540 Secondary Science Methods I (2)
(Laboratory) Become familiar with professional responsibilities of teaching science and provide entry level operational knowledge of instructional strategies, techniques, materials, and technology available along with required science content. Students lead discussions and teaching situations.

SCED 541 Secondary Science Methods II (3)
Prerequisite: EDFE 120 or EDFE 125. Prerequisite to student teaching. Consider curriculum and classroom organization, testing and evaluation, procedures and materials, relationship of subject area to total secondary program, emphasizing teaching techniques and of technology use. Students will lead discussions and teaching situations.

SCED 555 Science Education for Adults and Communities (3)
Provides an overview of the principles and skills required to teach non-formal and informal education with an adult/community education perspective.

SCED 560 Principles and Teaching of Ecology (3)
Ecological concepts, such as natural history, species interactions, ecosystems and global systems, are explored together with pedagogical strategies appropriate for teaching of these ecological principles. Delivered online.

SCED 562 Principles and Teaching of Cell Biology (3)
This course is an in-depth study of cell biology. Emphasis will be placed on cell structure, cell signaling/regulation, and cellular division/growth. In addition, students will explore effective teaching strategies to facilitate the learning of cell biology at the secondary school level.

SCED 564 Principles and Teaching of Evolution (3)
Prerequisites: BIO 101, BIO 110, BIO 265 or equivalent. This course helps teachers understand the evidence that supports evolution as a unifying concept in biology. The evolutionary concepts are integrated with pedagogical strategies appropriate for teaching evolutionary principles.

SCED 570 Teaching Science in the Elementary School (3)
(2 lecture, 2 laboratory) Prerequisite: EDFE 125. Develop a knowledge of objective, methods and materials needed for teaching a functional elementary school science program. Laboratory activities included.

SCED 578 K-12 Science Inquiry (3)
Students will explore and define the elements of inquiry in P-12 science education from the perspective of teaching with inquiry, ability to do inquiry, and as part of science content.

SCED 600 Science Education Research for K-12 Teachers (2)
Provides practicing K-12 teachers an examination and critique of current research in science education. It will focus on research design, analysis, and reporting of both qualitative and quantitative research.

SCED 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

SCED 671 Elementary and Middle School Science Curriculum (3)
Analyze elementary and middle level science programs regarding learning theory, research and the new Colorado Model Content Standards for science. Applications include strategies, management, and science technology and society.

SCED 678 Science Education Seminar (1-2)
Investigate current science education research, report on topics of interest in recent literature, discuss individual research problems. Repeatable, maximum of four credits.

SCED 680 Science Curriculum in Secondary/College Settings (3)
A survey of contemporary trends and issues associated with designing, implementing and evaluating science curricula at the secondary and tertiary levels.
SCED 694 Science Education Research (3)
Prerequisite: SRM 502 or equivalent. An introduction to research in discipline-based science education, providing background and experience in the major activities associated with current practice in both field-based and quantitative studies.

SCED 695 Action Research in Science Education I (1)
(Research) SCED 600. Research a problem in K-12 science education relevant to students' teaching situations. Develop goals, review literature, and plan an action research project. This course is the first of three courses.

SCED 696 Action Research in Science Education II (1)
(Research) SCED 695. Conduct the action research plan developed and approved in SCED 695. An approved Action Research Plan Project is required to take this course. Second of a three course series.

SCED 697 Action Research in Science Education III (1)
(Research) SCED 696. Complete the action research project by developing a summary and discussion. The final project must be presented to the action research committee. Final of a three course series.

SCED 699, Thesis (1-6)
Prerequisite: SCED 600 or equivalent. For majors in the Graduate Interdisciplinary Degree Program M.A. Natural Science K-12 Teaching Emphasis, and wish to complete a thesis. S/U Graded. Repeatable, maximum of 6 credits.

SCI 532 Energy for Today & Tomorrow (3)
This course will familiarize students with fundamental energy concepts and physics laws along with common problems associated with and applications of energy use. Renewable energy and energy production will be discussed.

SCI 536 Principles of Physics II (3)
Investigation of basic principles of energy related to thermodynamics and wave motion with technological applications. For certified teachers interested in improving understanding and pedagogic delivery of physics concepts.

SES — SPORT AND EXERCISE SCIENCE

School of Sport and Exercise Science
- Contact (970) 351.2535
- www.unco.edu/nhs/nes

Courses numbered SES 100 to SES 195 are:
Repeatable, no limitations.

SES 111 Bowling (1)
Gain knowledge and skill in the game of bowling. Participation fee.

SES 113 Fly Fishing/Trap Shooting (1)
Gain knowledge and skill in the activities of fly fishing and trap shooting.

SES 114 Golf (1)
Gain knowledge and skill in the game of golf. Participation fee.

SES 116 Water Safety Instructor (2)
A basic current and Emergency Water Safety or Lifeguard Training certification is required. Course trains instructor candidates to teach the American Red Cross Water Safety courses.

SES 118 Swimming (1)
Gain knowledge and skill in the activity of swimming.

SES 120 Lifeguard Training (2)
American Red Cross skills and knowledge required for an individual to properly assume the responsibilities of a lifeguard at a swimming pool or a protected (non-surf) open water beach.

SES 125 Hiking (1)
Gain knowledge and skill in the activities of hiking.

SES 127 Cross-Country Skiing (1)
Gain knowledge and skill in the activity of cross-country skiing. Participation fee.

SES 128 Cycling (1)
Gain knowledge and skill in the activity of cycling.

SES 130 Kayaking (1)
Gain knowledge and skill in the activity of kayaking. Participation fee.

SES 131 Orienteering (1)
Gain knowledge and skill in the activities of orienteering.

SES 133 Scuba Diving (1)
Gain knowledge and skill in the activity of scuba diving. Participation fee.

SES 134 Self Defense (1)
Gain knowledge and skill in the activity of self defense.

SES 135 Rock Climbing (1)
Gain knowledge and skill in the activity of technical climbing.

SES 132 Swimming Conditioning (1)
Improve personal skills and fitness through swimming activities.

SES 133 Weight Training (1)
Improve personal skills and fitness through weight training activities.

SES 170 Introduction to Field Based Experience (1)
Practical experience for those wishing to explore a career in teaching. Placement in most public or private schools, agencies, preschool through high school. Experience is to coordinate practice with theory. S/U graded. Repeatable, no limitations.

SES 200 Weight Training and Conditioning (1)
Prerequisite: SES 220. Majors and minors only. Motor skill acquisition, advanced techniques, and knowledge appropriate for the successful participation and instruction in strength training activities and conditioning.

SES 201 Track and Field (1)
Majors and minors only. To teach the rules, training principles, techniques, movement skills, and analyses of the sport of track and field to professional preparation candidates completing a physical education major.

SES 209 Dance Activities (1)
Majors and minors only. Focus on participation and analyses of traditional, social, American folk and square, and popular dance forms appropriate for upper elementary and secondary physical education.

SES 234 Mountain Biking (2)
Designed for outdoor education and recreation leaders implementing mountain biking into outdoor programs. The course covers technical skills, instructional methodology, leadership issues, and environmentally sound riding ethics.

SES 235 Backcountry Skiing (2)
Concurrent enrollment in SES 238. Designed to develop outdoor education and recreation leaders' skills and knowledge of teaching and leading backcountry skiing. Including classic touring, telemarking, backcountry skills and avalanche awareness.

SES 236 Technical Rock Climbing (2)
Develop students' knowledge and techniques for teaching and managing technical rock climbing activities, focusing on top-rope climbing. Topics include climbing and repelling skills, anchors, site management, equipment, and safety.

SES 237 Paddle Sports (2)
Introduces outdoor education and recreation leaders to technical skills, leadership concepts, and instructional methodologies of paddle sports. Emphasis is on minimum impact paddling skills for lake and river travel.
SES 238 Winter Wilderness Living (2)  
Concurrent enrollment in SES 235.  
Describes knowledge and techniques for  
teaching and leading winter camping  
and backcountry travel activities. Topics  
include avalanche awareness, and  
fundamental camping and travel  
techniques for winter environments.

SES 240 Secondary Physical Education  
Content I (3)  
Majors and minors only. Facilitates  
enhanced performance, analysis, and  
tactical understanding of invasion  
games and field run/score games (e.g.,  
basketball, soccer, team handball,  
football, speedball, ultimate frisbee,  
hockey, softball, cricket, and modified  
kickball).

SES 243 Outdoor and Adventure  
Programming (3)  
Majors only. Designed to provide  
physical education majors with activities  
and teaching strategies necessary for  
integrating and implementing outdoor  
and adventure activities into a school  
program.

SES 266 Introduction to Physical  
Education as a Profession (3)  
Prerequisites: 2.5 overall GPA, and 2.7  
major GPA. Co-requisite: EDFE 110,  
EDFE 170. Majors and minors only.  
Focus on historical and current issues  
and philosophical perspectives of  
physical education, sport, and fitness.  
Implications for today’s physical  
education programs will be identified  
and discussed.

SES 323 Motor Learning and  
Development (3)  
Study of the neuropsychological  
components of motor behavior, with an  
emphasis on movement problems.  
Laboratory provides application of  
concepts.

SES 338 Teaching Diverse Populations  
(3)  
Prerequisite: 2.5 overall GPA and 2.7  
major GPA required. Majors and Minors  
only. This course is designed to assist  
students in acquiring methods and  
techniques for teaching diverse  
populations in traditional and  
alternative physical activity settings.

SES 342 Teaching Health-Related  
Fitness (3)  
Prerequisites: SES 220, SES 340, EDFE 120  
and 2.5 overall GPA and 2.7 major  
GPA required. Majors and minors only.  
Facilitates future teacher's knowledge;  
skills appreciation and confidence  
needed to lead school-aged children  
in the development of active healthy  
lives.

SES 440 Developing Pedagogical Skills  
in Elementary Physical Education (4)  
(3 lecture, 1 laboratory) Prerequisites:  
EDFE 120, SES 323, SES 210, SES 340  
and 2.5 overall GPA and 2.7 major GPA  
required. Laboratory required. Majors  
and minors only. Course is the second  
in sequence of professional teaching  
courses in physical education. Designed  
to develop skills and knowledge related  
to elementary physical education.  
Laboratory provides application of  
principles.

SES 442 Developing Pedagogical Skills  
in Secondary Physical Education (4)  
(3 lecture, 1 laboratory) Prerequisites:  
EDFE 120, SES 440 and 2.5 overall GPA  
and 2.7 major GPA required. Laboratory  
required. Majors and minors only.  
Provides preservice physical education  
teachers with theoretical knowledge and  
practical experiences required to  
successfully teach secondary physical  
education. Laboratory provides  
application of principles.

SES 500 Wilderness First Responder/  
CPR (3)  
Designed to provide outdoor  
practitioners with the knowledge  
and skills needed to deal with emergencies  
in remote settings. 80-hour Curriculum.  
Successful completion provides  
Wilderness First Responder certification.

SES 505 Exercise Programming for  
Cancer Patients (3)  
Prerequisite: SES 322 or equivalent.  
Majors only. This course will prepare  
individuals to design and conduct  
exercise intervention programs for  
cancer patients.

SES 508 Workshop (1-3)  
A variety of workshops on special topics  
within the discipline. Goals and  
objectives will emphasize the  
acquisition of general knowledge and  
skills in the discipline. Repeatable, under  
different subtitles.

SES 510 Cardiac Rehabilitation (3)  
Prerequisite: SES 322 or SES 626 or  
equivalent. Majors only. Basic  
electrocardiogram and ECG  
interpretation will be studied. Emphasis  
is placed on interpretation of resting  
and exercise ECG’s and monitoring  
procedures, interpretation of  
abnormalities and drugs that may affect  
exercise.

SES 513 Professional Renewal (1-3)  
Update skills and knowledge of  
professions in the discipline. Goals  
and objectives will be specifically  
directed at individual professional  
enhancement rather than the  
acquisition of general discipline  
knowledge or methodologies. S/U or  
letter graded. Repeatable, under  
different subtitles.

SES 520 Marketing of Sport (3)  
Develop an understanding of and skill  
in the marketing process as it relates to  
promotion and public relations  
activities in physical education athletics  
and commercial sport operations.  
Cannot be taken in lieu of SES 576  
required in the Sport Administration  
graduate programs.

SES 530 Challenge Course Programming  
(3)  
Study the procedures, techniques, and  
responsibilities for challenge course  
supervision, including operational  
guidelines and processes, maintenance  
and general inspection, equipment,  
safety procedures, and rescue.

SES 550 Neural Aspects of Kinesiology  
(3)  
Advanced study of neurological  
influences to movement. Learn  
terminology, structures of the human  
nervous system, cellular and  
macroscopic neurophysiology, and  
clinical applications associated with  
reflexive and voluntary movements and  
posture.

SES 555 Supervised Practicum in  
Teaching a College Basic Activity Course  
(1-3)  
Consent of advisor. Provide a supervised  
college teaching experience of a basic  
activity course for qualified graduate  
students. S/U graded. Repeatable,  
maximum of three credits.

SES 560 Issues and Ethics in Sport  
Management (3)  
An exploration of major issues, ethical  
thories, moral reasoning and their  
impact on the operation of programs in  
program. Designed to prepare  
majors and minors for entry into  
manage professional careers in the  
sport industry.

SES 576 Sport Promotion and  
Marketing (3)  
Develop an understanding of theories  
and principles involved in managing a  
program in the sport industry.

SES 580 Advanced Prevention, Care  
and Rehabilitation of Athletic Injuries (3)  
Prerequisite: SES 380 or equivalent.  
Analyze, evaluate and apply current  
techniques and practices to injuries in  
the school physical activity and sports  
programs.

SES 582 Psychology for Sports Coaches  
(3)  
Understanding and applying  
psychological principles as they relate to  
sports coaching and athletic  
performance.

SES 583 International Perspectives of  
Sports Coaching (3)  
Examine international perspectives of  
sport and sports coaching. Emphasis is  
placed on developing and enhancing  
students’ knowledge and understanding  
of international coaching perspectives.

SES 584 Sport Administration for  
Sports Coaches (3)  
Develop an understanding of theories  
and principles involved in the  
management of sport and athletics from  
a coaching perspective.

SES 585 Introduction to Sports Injuries  
for Coaches (2)  
Introductory athletic training principles  
and techniques for coaches/students.  
Emphasis on the prevention and  
treatment of athletic injuries. CPR/first  
ad certification recommended. Not  
acceptable for SES majors.
SES 586 Training and Conditioning Principles for Sports Coaches (3)
Application of the physiological principles of human movement as they relate to the response to exercise training, training for sport performance, sport nutrition, and ergogenic aids.

SES 587 Sports Coaching Principles and Perspectives (3)
Provide a comprehensive overview of the coaching profession. Emphasis is placed on developing and enhancing students' knowledge and understanding of concepts, principles and techniques of coaching.

SES 588 Evaluation of Coaching using Technology (3)
Emphasis is placed on the use of technology to evaluate skill, tactics, and technical components of coaching. Evaluation of effective coaching in game and practice settings are incorporated.

SES 589 Bridging Theory and Practice in Sports Coaching (3)
Examination of theoretical and applied concepts of coaching. Emphasis is placed on practical experience of coaching sport that concentrates on coach education theory and effective coaching practices.

SES 594 Practicum in Outdoor Leadership (1-6)
A field based, advanced course in wilderness-based teaching and leadership. Students develop skills and knowledge in group development, planning, and safe leadership of ethical and effective wilderness travel. Repeatable, maximum of 12 credits.

SES 602 Introduction to Research in Sport and Exercise Science (3)
Receive an introduction and some application of strategy and methods of research to problem solving in physical education, sport management and exercise science.

SES 603 Professional Development Seminar (3)
This seminar will provide a cross disciplinary knowledge of the sport and exercise science field while simultaneously preparing students to disseminate scholarly work.

SES 604 Teacher and Coach Action Research (3)
Provides introduction to self-inquiry and pedagogical reflection through action research. Focuses on historical background, purpose, instruction and guidance for teachers and coaches to conduct action research.

SES 605 Youth Development and Physical Activity (3)
Advanced theoretical and applied understanding of youth development programs. Emphasis is on service learning experience with physical activity programs that concentrate on the goals of personal and social responsibility.

SES 606 Scholarship in Youth Development (3)
The intent of this course is to critically examine scholarly efforts concerning programs and issues in youth development.

SES 612 Assessment in Sport Pedagogy (3)
Disseminate knowledge that contributes to quality professional practice. Students will experience new ways of thinking about assessment. Alternative ways of determining student learning, evaluation, grading and reporting will be explored.

SES 614 Analysis of Teaching in Physical Education (3)
Present and analyze systems used in evaluating student behavior, teacher behavior and student-teacher interaction. Study strategies for planning and implementing effective teaching and supervising in physical education.

SES 615 Qualitative Research in Sport and Exercise Science (3)
SRM 680 or consent of instructor. The epistemological and practical underpinning of qualitative research as an alternative or complement to quantitative research will be studied in this course through readings, class discussions, and a practical project.

SES 619 Advanced Biomechanics (3)
Prerequisite: SES 221 or equivalent. Make an advanced study of the mechanical components of human movement, stressing the analysis of movement problems.

SES 620 Neuromuscular Structure and Function in Sport (3)
Prerequisite: SES 220 or equivalent. Make an advanced study of the structural components of human movement, with special attention to the analysis of movement problems.

SES 622 Directed Studies (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

SES 624 Advanced Developmental Kinesiology (3)
Prerequisite: SES 323 or equivalent. Advanced study of the influence of developmental and aging processes upon movement across the lifespan.

SES 625 Laboratory Techniques in Kinesiological Research (3)
Consent of instructor. Titles: Laboratory Techniques in Biomechanics; Techniques in Exercise Physiology; and Laboratory Techniques in Social Psychological Kinesiology. Repeatable, under different subtitles.

SES 626 Advanced Physiological Kinesiology I (3)
Prerequisite: SES 322 or equivalent. Advanced study of energy metabolism and exercise nutrition involved with human movement.

SES 627 Advanced Physiological Kinesiology II (3)
Prerequisite: SES 626 or equivalent. Advanced study of the muscular and endocrine systems involved with human movement.

SES 628 Adventure Education (3)
Planning and implementing adventure activities that provide challenge, choice, and opportunities for personal and group growth. Emphasis on program development, facilitation techniques, and direct application of adventure activities and principles.

SES 629 Concepts in Kinesiology (3)
Experiences provided are: Biomechanics of Locomotion, Cardiopulmonary Physiology and Motivation. Repeatable, under different subtitles.

SES 631 Outdoor Education (3)
Study the history, philosophy and principles of outdoor physical education. Focus will be on the interdisciplinary nature and educational growth through outdoor experiences.

SES 635 Exercise and Sports Psychology (3)
Application of psychological concepts, principles and empirical findings to exercise programs and organized sport settings.

SES 640 Curriculum in Physical Education (3)
Consider the principles underlying curriculum instruction, various curriculum elements and build a curriculum in physical education.

SES 641 Instructional Strategies for Elementary School Physical Education (3)
Study of research and advanced techniques in teaching elementary physical education. Emphasis on teacher instruction and management, student skill learning time and current program planning.

SES 642 Instructional Strategies for Secondary School Physical Education (3)
Study of research and advanced techniques in teaching secondary physical education. Emphasis on understanding the role of the secondary teacher and secondary student needs in teaching physical education.

SES 643 Instructional Strategies for K-12 Physical Education (3)
Prerequisites: SES 614. Exploration, participation, and analysis of a broad-based variety of physical activities, appropriate curriculum, and teaching skills that contribute to quality K-12 physical education.

SES 645: Supervision in K-12 Physical Education (3)
To provide a functional understanding and critique of the nature and scope of teacher supervision in physical education.
SES 650 Financial Management for Sport Organizations (3)
Develop an understanding of and skill in financial resource management for the operation of programs in sport, physical education, fitness, athletics and recreation.

SES 655 The Olympic Games (3)
An overview of the nature and significance of the modern Olympic Games from historical, sociological and business perspectives.

SES 656 Sponsorship Management (3)
Develop advanced understanding and skill in management of sport sponsorships. Emphasis will be on the application of marketing principles and exchange theory relating to managing sport sponsorship in specific scenarios.

SES 660 Sport Personnel Management (3)
Develop understanding of and skill in human resource management for the operation of programs in sport, physical education, fitness and athletics.

SES 665 Advanced Sociological Kinesiology (3)
Advanced study of the application of sociological concepts and theories to current issues in kinesiology.

SES 670 Sport and Higher Education (3)
Identification and examination of the contemporary issues and problems in sport in American higher education, their historical foundation, and propose methods for their resolution.

SES 672 Advanced Sport Law (3)
Prerequisite: SES 688 Advanced study of employment law, intellectual property, labor law, antitrust, and contract law in sport business.

SES 675 Management of Sports Facilities and Equipment (3)
An examination of the functions of planning, management, evaluation, maintenance, operations and situational analysis as they relate to management of sport facilities and equipment.

SES 676 Sport Public Relations and Information Systems (3)
Presentation of principles, standards and guidelines in sport public relations and information systems involved in sport information management.

SES 678 Event Development and Management (3)
Provide student with the skills necessary to develop, propose and conduct sport-related contests and special events including game management and facility management.

SES 680 Perspectives in Sport Pedagogy (3)
Philosophical perspectives of issues in physical education and sport, which are influenced by contemporary trends in American education.

SES 685 Critical Pedagogy (3)
Students will examine critical pedagogical philosophies and strategies while analyzing socialization process in schools. Also, students will learn how to develop critical awareness and take transformative action in schools.

SES 688 Legal Aspects of Sport (3)
Study the law and implications relative to physical education and sport. Emphasis on legal theory and responsibilities and risk management.

SES 690 Graduate Seminar in Kinesiology (1)
Consent of advisor. Examine professional and scholarly issues in kinesiology, physical education and sport administration through readings, discussions, laboratory tutorials and presentations of current research topics. S/U graded. Repeatable, maximum of three credits.

SES 692 Graduate Internship in Sport and Exercise Science (1-6)
Consent of instructor. Supervised experience structured to the special focus and functions of the student's graduate program. S/U graded. Repeatable, maximum of six credits.

SES 694 Special Topics in Sport and Exercise Science (1-3)
Engage in a course of study designed to investigate a special topic. Repeatable.

SES 695 Seminar in Physical Education (2)
Consent of instructor. Students will make an in-depth study of contemporary topics under guidance of qualified graduate faculty and consultants. Repeatable, may be taken two times.

SES 696 College Teaching (3)
Consent of instructor. Examines instructional models, issues and practices specific to teaching at the college level. Presentation modes such as lecture, discussion, questioning and small group procedures will be included.

SES 699 Thesis (1-6)
Optional for Master of Science students on recommendation of major advisor. S/U graded. Repeatable, no limitations.

SES 703 Research Seminar in Sport and Exercise Science (3)
For doctoral candidates planning to conduct research in Physical Education or allied areas. Learn techniques and procedures of research and receive aids in development of required research outline for degree.

SES 705 Seminar in Sport Administration (2)
Student will undertake an in-depth study of current topics related to the administration and management of sport, physical education, fitness and athletic programs.

SES 755 Supervised Practicum in College Teaching (1-6)

SES 797 Doctoral Proposal Research (1-4)
Doctoral students must earn a minimum-maximum of 4 hours credit in partial fulfillment of degree requirements. S/U graded. Repeatable, maximum of four credits.

SES 799 Doctoral Dissertation (1-12)
Doctoral students must earn at least 12 hours of credit for the dissertation as a requirement of the student's doctoral program. S/U graded. Repeatable, no limitations.

SES 999 Graduate School Continuous Registration (1)
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.
SOC 544 Sociology of Criminal Law (3)  
Graduates only. Focus on substantive and procedural criminal law in the context of sociological theory, research and jurisprudence.

SOC 551 Classical Social Theory (3)  
Study the major pioneering classical social theorists who established modern sociology during the late 19th and early 20th centuries. Focus on the emergence of sociology as a discipline.

SOC 552 Applied Social Theory (3)  
Provide understanding of the role of theory in the social sciences, provide knowledge of major paradigms utilized in contemporary social science theory, assess applied explanatory strengths and weaknesses of paradigms.

SOC 562 Social Statistics (3)  
Prerequisite: STAT 150. Introduce applied statistics in social science research. Levels of measurement; measures of central tendency and variability, probability; estimation and hypothesis testing; measures of association - chi square.

SOC 563 Qualitative Methods (3)  
Epistemological foundations of qualitative research: field observation, ethnography, interviews, focus groups; project design, research ethics, site selection, interviewing and observation techniques, coding and analysis, and interpretation/presentation of findings.

SOC 571 Sociology of Aging (3)  
Survey theories and research on the social aspects of aging with emphasis on later maturity and old age.

SOC 580 Social Policy Analysis (3)  
Examines social policy and society. Socio-cultural historical conditions, social institutions which affect policy formation, political change and social policy and utilization of sociological concepts and methods are examined.

SOC 590 Proseminar (0)  
This course includes an overview of the field of sociology, career paths as well as orientation to graduate education, research approaches and possibilities. Ethical issues in the field today are discussed. Course meets one hour per week. Must be taken the first available semester after being admitted to the graduate program. Repeatable. S/U graded.

SOC 593 Practicum in College Teaching of Sociology (3)  
Prerequisites: Seniors and above. Majors only. Students contact the Sociology department and fill out an application to take the course. As part of the coursework, student is assigned to assist a professor and will receive experience in observation and supervised practice in a lower division course. A-F Graded. Application required.

SOC 622 Directed Studies (1-3)  
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

SOC 660 Applied Social Research (3)  
Apply techniques of applied sociological research to an approved community project in applied social research, understand the relationship between basic and applied social research.

SOC 691 Research Internship (1-9)  
Prerequisites: Nine hours of graduate credit in sociology, a g.p.a. of 3.0 and consent of instructor. Put classroom learning into practice with research in an organizational setting. Repeatable, maximum of nine credits. S/U graded.

SOC 699 Thesis (1-6)  
Optional for Master of Arts students upon recommendation of major advisor. S/U graded. Repeatable.

SOC 999 Graduate School Continuous Registration (1)  
To permit a graduate student to continue making progress in a degree program. S/U graded. Repeatable, no limitations.

SPAN 502 Spanish Composition (3)  
Designed to acquaint students with general trends of Spanish civilization and culture. Includes historical, economic, political and artistic developments of Spain from prehistoric times to the present.

SPAN 508 Workshop (1-3)  
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

SPAN 510 Advanced Placement Program-Spanish (1-3)  
Consent of instructor. A course designed to provide content and pedagogical information related to the teaching of grammar and literature in the secondary school Spanish advanced placement program. S/U graded. Repeatable, no limitations.

SPAN 521 Spanish Civilization and Culture (3)  
Designed to acquaint students with general trends of Spanish civilization and culture. Includes historical, economic, political and artistic developments of Spain from prehistoric times to the present.

SPAN 550 Masterpieces of Spanish Literature (3)  
Chronological study of Spanish literary movements, schools and their literary masterpieces from Middle Ages to XXI Century. Celestina, ‘el picaro’, Don Juan, and Don Quijote will be presented.

SPAN 551 Masterpieces of Latin American Literature (3)  
A study of award-winning works of literature. Emphasis on multi-cultural books for children and adolescent literature of acculturation and assimilation.
SPAN 560 Spanish Civilization and Culture (2)
Interpretation of the civilization and culture of Spain from its earliest beginnings to the present. Includes an analysis of the artistic, political and economic currents that have shaped modern Spain.

SPAN 561 Latin American Civilization and Culture (2)
Designed to examine the cultural heritage of Latin America and its current state of political, economic and social development. Forces affecting the everyday life of the people are emphasized.

SPAN 562 Mexico and United States Hispanic Civilization and Culture (2)
The course examines the history and cultural heritage of the contemporary Mexican and of the Hispanics (Chicano, Cuban, Puerto Rican) living in the United States.

SPAN 563 Hispanic Cultural Topics (1-6)
Selected readings and discussion of a variety of cultural topics that manifest themselves in the everyday life of the Hispanic people. Customs and traditions will be emphasized. Repeatable, maximum of six credits.

SPAN 570 Readings in United States Hispanic Literature (1-6)
Designed to cover literature in English or Spanish by United States Hispanics: Mexican, Cuban or Puerto Rican Americans. Readings in narrative, theatre, poetry. Content is variable and determined by instructor. Repeatable, maximum of six credits.

SPAN 571 Readings in Spanish Literature (1-3)
Thorough coverage of topics such as any period of Spanish literature, especially the Golden Age, the generation of 1898 and post-Civil War novel. Repeatable, maximum three credits.

SPAN 572 Readings in Latin American Literature (1-3)
Designed to cover selected readings in Latin American literature. Course may be designed by author, themes or genre. Content is variable and will be determined by instructor. Repeatable, maximum of three credits.

SPAN 575 Masterpieces of 20th and 21st Century Latin America (2)
A study of the most representative Masterpieces of 20th century Latin American literature. Representative topics might include the modern novel, the essay, contemporary theatre and poetry and fantastic literature.

SPAN 576 Mexican Literature (1-3)
Provides a basic understanding of Mexican literature, its general trends and some of the most important authors in each of the four genres: poetry, novel, theatre and short story.

SPAN 580 Grammar Topics (1-6)
An in-depth study of difficult Selected structures of the language, which traditionally present problems; such as: the subjunctive mood, ser and estar, preterite vs. imperfect and others. Repeatable, maximum of six credits.

SPAN 581 Advanced Spanish Grammar (2)
An intensive study of the more complex theories and forms of Spanish grammar, with emphasis on mood, tense and voice.

SPAN 582 Spanish for Oral Proficiency (2)
A course designed to develop oral proficiency by exposing students to superior linguistic functions.

SPAN 583 Oral and Written Discourse (2)
Designed to enable students to speak and write extensively in Spanish, using description, narrations and exposition. Emphasis will be on fluency, accuracy and organization.

SPAN 600 Introduction to Graduate Study and Research Methods (3)
Orientation to graduate study in the MA in Foreign Languages: Spanish Teaching Emphasis, presents principles of design, analysis, and methodology of graduate-level research and writing the areas of pedagogy, linguistics, literature and cultural studies.

SPAN 622 Directed Studies (1-3)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

SPR 502 Applied Statistics (4)
Hypothesis formulation and testing: estimation and confidence limits; one- and two-sample tests; and statistical decision theory. Study inferences arising from distribution functions: t, F, chi-square, binomial, normal.

SRM 519 Qualitative Analysis Software (1)
An overview and basic understanding of qualitative analysis software including preparation of data files, managing text and images, creating codes, memos, queries models and reports.

SRM 520 Introduction to Statistical Computing (1)
The course is designed to familiarize students with the use of statistical packages on both the mainframe and microcomputer platforms. Students will learn to organize, input, and analyze data.

SRM 521 Statistical Computing with SPSS (1)
Prerequisites: Completion of or concurrent enrollment in SRM 602; familiar with basic Windows commands and features, including use of pull-down menus, basic text editing features, etc. Course will acquaint students with the data management, data transformation and statistical analysis procedures available in SPSS for Windows.

SRM 522 Introduction to R (1)
The R programming language is an important and current research tool for statisticians. Students will receive an introduction to data manipulation, graphical techniques, model building, and some programming using R.

SRM 551 Mathematical Statistics with Applications I (4)
Consent of instructor. Study of probability, random variables, distributions, moments, expected values and standard probability laws, probability bounds and point estimation.

SRM 552 Mathematical Statistics with Applications II (4)
Prerequisite: SRM 551. Continuation of SRM 551. Sampling distributions, estimation techniques, maximum likelihood, tests of hypothesis, confidence intervals, regression and chi-square tests.

SRM 595 Special Topics in Applied Statistics and Research Methods (1-4)
Specialized topics or contemporary issues. Topics vary. Repeatable, maximum two times, under different subtitles.

SRM 600 Introduction to Graduate Research (3)
Principles of research, design and analysis. Read and critique published research. Required of all first year graduate students except in those departments with substitutes. Taught every semester.

SRM 602 Statistical Methods I (3)
Prerequisite: SRM 600. Brief review of descriptive statistics. Covers probability, inference and sampling, correlation, hypothesis testing one-way ANOVA and an introduction to computer statistics packages.

SRM 603 Statistical Methods II (3)
Prerequisite: SRM 602. Continuation of SRM 602. Review of one-way ANOVA. Covers multiple comparisons, factorial designs, nested and mixed models, repeated measures, analysis of covariance and use of computer statistics packages.

SRM 606 Multiple Linear Regression Analysis (3)
Prerequisite: SRM 502 or Consent of instructor. Matrix approach to continuous and categorical variables, polynomial Selected non-linear models; formulation of ANOVA and ANCOVA designs and collinearity; regression methods; backward elimination, forward selection, stepwise regression.
SRM 607 Non-Parametric Statistics (3)
Prerequisite: SRM 502 or Consent of instructor. Study of non-parametric tests; the rationale underlying the tests; examples of application of the tests in behavioral research; and comparison of the tests with their parametric equivalents.

SRM 608 Experimental Design (3)
Prerequisite: SRM 502 or SRM 603. Topics include factorial designs, crossed/ nested designs, repeated measurements, blocking, analysis of covariance, pre- and post-multiple comparisons, trend analysis, power and use of computer software.

SRM 609 Sampling Methods (3)
Prerequisite: SRM 502 or Consent of instructor. Learn methods of survey sampling, including such topics as simple and stratified random sampling, ratio estimation, cluster sampling, systematic sampling, questionnaire design, problems of non-response and non-sampling errors.

SRM 610 Statistical Methods III (3)
Prerequisite: SRM 502 or SRM 603. Additional multiple regression topics. Introduction to MANOVA designs, discriminant analysis, factor analysis, cluster analysis, and path analysis.

SRM 611 Advanced Statistical Data Analysis (3)
Prerequisite: SRM 610. Student deals with large data sets and problems and issues that arise when working with such sets such as missing data, "dirty" data, missing errors, storage issues, and the like.

SRM 614 Linear Models (3)
Prerequisite: SRM 502, SRM 551. Advanced topics in matrix algebra with applications to statistics. Development of the theory of linear models as a structure for handling problems in regression, analysis of variance, and experimental design.

SRM 617 Biostatistics and Health Data Analysis (3)
Prerequisite: SRM 600 or equivalent. Students will gain an understanding of biostatistical methods. This course enables students to develop the skills and knowledge necessary to manage and analyze health care and biomedical data.

SRM 620 Advanced Statistical Programming (3)
Prerequisites: SRM 520, SRM 502 or SRM 603, and SAS programming competence with the data steps and basic data manipulation and statistical procedures. Introduces advanced programming tools using the SAS System. Designed to better qualify students for jobs in statistical data analysis.

SRM 622 Directed Studies (1-3)
Consent of instructor. Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

SRM 625 Applied Multiple Regression Analysis (3)
Prerequisites: SRM 602 and SRM 603 or equivalent. Acquaint students with the major applications of and issues related to multiple regression analysis. Gain the skills necessary for conducting and interpreting studies involving multiple regression analysis.

SRM 627 Survey Research Methods (3)
Prerequisites: SRM 600, SRM 602 and EPSY 674 or equivalent. Covers the uses of surveys, the process involved in designing and implementing a survey study, and general issues related to survey research.

SRM 629 Structural Equation Modeling (3)
Prerequisites: SRM 610 and SRM 625 or equivalent or permission of instructor. Applications of and issues related to covariance structure modeling. Students will gain skills needed for designing, conducting, and interpreting studies involving confirmatory factor analysis and latent variable path modeling.

SRM 635 Categorical Data Analysis (3)
Prerequisites: SRM 502 or SRM 603. Topics will include the historical development of specific models and their applications, model formulations for categorical data, model implementation using the SAS System, and interpretation of the results of such analyses.

SRM 645 Statistical Process Control (3)
Prerequisites: SRM 502. Introduction to the use of statistical methods for quality improvement. Provides a comprehensive coverage of material from basic principles to state-of-the-art concepts and applications to both product and non-product situations.

SRM 650 Research and Statistics Colloquium (1)
Required of all Master's and doctoral students. Students present the results of their own research and critique and discuss the presentations of other students and faculty. S/U graded. Repeatable, no limitations.

SRM 660 Mixed Methods Research (3)
Topics will include the historical development, design, and interpretation of both quantitative and qualitative research. Students will use data they collected in a variety of analysis and presentation exercises.

SRM 670 Qualitative Research (3)
Prerequisite: SRM 680 or equivalent. In-depth study of qualitative research including life history, oral history, biography, and auto-biography. Group and individual qualitative inquiries will be conducted. Interviewing, ethics and research benefiting participants will be emphasized.

SRM 685 Educational Ethnography (3)
Prerequisite: SRM 680 or equivalent. An in-depth study of ethnography as related to educational research including issues of ethics, politics, diversity, and the researcher's role. Students will propose and conduct a mini-educational ethnography.

SRM 686 Qualitative Case Study Research (3)
Prerequisite: SRM 680 or equivalent. In-depth examination of qualitative case study research. Characteristics of general case studies along with specific types of case studies will be covered. Students will propose and conduct a mini-case study.

SRM 688 Writing as Analysis of Qualitative Research (3)
Prerequisites: SRM 680 or equivalent and one of the following: SRM 685, SRM 686 or SRM 687 or equivalent. An in-depth study of the role writing plays in qualitative research data collection, analysis and representation. Students will use data they collected in a variety of analysis and writing activities.

SRM 689 Internship in Applied Statistics (1-10)
Experiential learning in an off-campus setting, such as the Research Consulting Lab. Students work a minimum of 3 hours per week for each hour of credit. S/U graded. Repeatable, maximum of 10 credits.

SRM 694 Practicum (1-9)
Consent of instructor. Experiential learning in an on-campus setting, such as the Research Consulting Lab, in conjunction with supervision by a faculty member. Students work a minimum of 3 hours per week for each hour of credit. S/U graded. Repeatable, maximum of 18 credits.

SRM 700 Advanced Research Methods (3)
Prerequisites: Either SRM 502 or SRM 602. Advanced research designs, concepts and methods. Required of all specialist and doctoral candidates.
SRM 705 Advanced Issues in Research Methods (3)
Prerequisites: SRM 602, SRM 603, SRM 610, and EPSY 674 or equivalent; additional course work in research design, measurement and statistics is recommended. Seminar is designed to acquaint advanced doctoral students with selected current issues in the field of research methodology. Topics will vary based on instructor and student interest.

SRM 731 Multivariate Analysis (3)
Prerequisite: SRM 551, SRM 614. Introduces multivariate data structures including geometrical properties and interpretations, the multivariate normal distribution, multivariate one- and two-sample tests on mean vectors and covariance matrices, MANOVA, and profile analysis.

SRM 765 Apprenticeship (1-3)
Consent of instructor. Work with faculty member on professional endeavors such as research, writing, course planning or public service. Requires 3 hours per week for each credit. S/U graded. Repeatable, maximum nine credits.

SRM 770 Evaluation: Advanced Methods (3)
Prerequisite: SRM 670. Advanced methodological techniques for program evaluation. Topics include tailoring evaluations to the needs of clients and stakeholders, diagnostic procedures and needs assessments, program monitoring and judging the impact of programs.

SRM 797 Doctoral Proposal Research (1-4)
Required of all doctoral students. Doctoral students must earn 4 hours as partial fulfillment of requirements for the doctorate. Check with the Graduate School regarding appropriate procedures and formats. S/U graded. Repeatable, maximum of four credits.

SRM 799 Doctoral Dissertation (1-12)
Required of all doctoral candidates. Must earn 12 hours as partial fulfillment of requirements for the doctorate. Dissertation must be approved by and defended before the dissertation committee. S/U graded. Repeatable, no limitations.

TED 602 Teacher Leadership (3)
Assist teachers in exploring their professional context (socially, politically and organizationally) and their role in enhancing, general schooling conditions, learning processes and outcomes.

TED 605 Professional Seminar II (2)
Prerequisites: SRM 600. This course is designed to be a capstone experience. Synthesize and integrate what has been learned in the content and pedagogy coursework with classroom teaching and other work related experiences.

EBS — TEACHING AMERICAN SIGN LANGUAGE

School of Special Education
- Contact (970) 351.2691
- www.unco.edu/cebs/sped

TASL 501 First and Second Language Acquisition in ASL (3)
The course will introduce major theories of acquisition, and similarities and differences between first language and second language acquisition and learning for teaching ASL as L1 and L2.

TASL 502 ASL Teaching Methods (3)
The course will introduce theories and methods for teaching ASL as L1 and L2 across multiple instructional settings: elementary, secondary and post-secondary.

TASL 503 ASL Assessment and Testing (3)
Prerequisites: TASL 501 and TASL 502. The course will discuss classroom assessment tools and evaluation techniques to assess L1 and L2 ASL students’ receptive, expressive and conversational skills and socio-cultural knowledge across multiple instruction settings.

TASL 504 ASL Curriculum Development and Design (3)
Prerequisites: TASL 501 and TASL 502. The course will introduce ASL education across multiple educational settings.

TASL 505 Teaching Deaf Community, Culture, and ASL Literature (3)
Prerequisites: TASL 502 and TASL 504. The course will focus on methods of teaching Deaf community and Culture, and ASL literature in ASL classes. Appropriate cultural, community and literature contents will be explored.

TASL 506 Contemporary Professional Issues in Teaching ASL (3)
Prerequisites: TASL 503 and TASL 504. The course will explore and address the contemporary issues in the profession of teaching ASL including language policy, state and national credentialing issues.

TASL 507 ASL Research Methods (3)
Prerequisites: SRM 600 and TASL 506. The purposes, values, designs and methods of research in educational setting will be introduced. The students will conduct research on a topic related to ASL teaching.

TASL 593 Practicum for ASL Teaching I (3)
Prerequisites: TASL 501, TASL 502, TASL 503 and TASL 504. Students will have observational learning experiences with other ASL teachers in ASL as first language or second language instruction in various educational settings.

TASL 594 Practicum for ASL Teaching II (3)
Prerequisite: TASL 593. Students will have in-depth teaching and learning experiences in teaching ASL as a first language or second language in an educational setting.

THEA — THEATRE ARTS

School of Theatre Arts and Dance
- Contact (970) 351.2991
- www.arts.unco.edu/theatredance

THEA 385 Methods of Teaching Drama (3)
Prerequisite: EDFE 120 or EDFE 125. Learn teaching techniques, curriculum and classroom organization, testing and evaluation, procedures and materials and relationship of the subject area to the total program.

THEA 508 Workshop (1-3)
A variety of workshops on special topics within the discipline. Goals and objectives will emphasize the acquisition of general knowledge and skills in the discipline. Repeatable, under different subtitles.

THEA 513 Professional Renewal (1-3)
Update skills and knowledge of professionals in the discipline. Goals and objectives will be specifically directed at individual professional enhancement rather than the acquisition of general discipline knowledge or methodologies. S/U or letter graded. Repeatable, under different subtitles.

THEA 601 Graduate Practicum in Theatre (1-4)
Qualified graduate, permission of instructor, advisor and department. This specialized, supervised field work course involves theory and methodology in practice. Copies of written evaluation must be filed with instructor and department. Repeatable, maximum of four credits.

THEA 622 Graduate Directed Research in Theatre (1-4)
Individualized investigation under the direct supervision of a faculty member. (Minimum of 37.5 clock hours required per credit hour.) Repeatable, maximum concurrent enrollment is two times.

THEA 650 Graduate Summer Theatre (1-0)
Acceptance by Theatre Arts staff only. Graduate workshop in acting and technical theatre, with 8-hour daily rehearsals for 8 weeks for summer productions. Repeatable, maximum of 30 credits.
THED 530 Theatrical Production I (3)
Prerequisites: THED 600 and THED 670. Students will gain a solid working overview in design, including but not limited to the following: costuming, stage make-up, scenery, sound and lighting.

THED 531 Theatrical Production II (3)
Prerequisites: THED 600, THED 670, THED 540, THED 560, THED 680 and THED 690. This course is a continuation of the ideals and concepts offered in THED 530 with emphasis placed upon those areas not addressed in Technical Production I.

THED 540 Directing/Acting: Realism and Non-Realism/Period Styles (3)
Prerequisite: THED 600 and THED 670. This course will include advanced studies in the approaches and techniques of directing and acting in realism; as well as explore the styles and theatrical periods of non-realism.

THED 541 Directing/Acting: Musical Theatre (3)
Prerequisites: THED 600, THED 670, THED 530, THED 540, THED 560, THED 680, and THED 690. This course will explore the tasks of acting in, directing, choreographing, and mounting a musical theatre production.

THED 560 Innovative Strategies in Drama Education (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate recommended not required. Students will research theatre education strategies practiced in the US and internationally. Focus will be paid to investigating methods which break the mold of traditional practices in most secondary school settings.

THED 561 Voice and Movement (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate recommended not required. This course is designed to provide an advanced working knowledge of the voice using fundamental through advanced exercises. The movement section of this course will provide working knowledge of the actor's body and its connection to vocal work.

THED 560 Dramaturgy/Research Methodology (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate is recommended, yet not required. Students learn effective research strategies for the field of theatre arts. Students will produce a dramaturgical protocol, requiring detailed preparatory research, testing of ideas, and public presentation of theory and concepts in practice.

THED 670 Advocacy, History and Philosophy of Theatre Education (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate is recommended yet not required. This course will explore the history and philosophy of theatre education in the U.S. Participants will investigate the guiding question: why is theatre education essential for every school?

THED 680 Theatre Education Curriculum Development (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate recommended not required. The purpose of this course is for students to apply the techniques and strategies acquired from previous courses into creating actual curriculum for their classrooms. Students will conduct interviews with experienced teachers in the field, research national theatre curriculum, and analyze and develop new curriculum.

THED 690 Thesis I (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate is recommended yet not required, THED 530, THED 540, THED 560. In this course, students will prepare a prospectus proposal and a portion of the prompt book for their Master's thesis project.

THED 699 Thesis II (3)
Prerequisites: B.A. or B.S. degree, Teaching Certificate is recommended, yet not required, 33 credit hours of program completed. In this course, students will finish the dramaturgical protocol and promptbook for their Master's thesis project and produce the show that accompanies them both. S/U graded.