

College of Science and Education

Academic Catalog 2025-2026

Effective 8-22-2025

Mission: To provide a Christian based educational environment where students learn through hands-on, experiential methodologies, by immersion into God's natural world.

Vision: An opportunity for students to experience a college environment filled with God's beautiful animals and plants, based in Christian principles and Faith. To learn through "real life" experiences. God's earth and peoples will be opened to you and through these treasured experiences and expeditions, we pray you will discover who you are, your place in the world and God's purpose for your life.

Philosophy: CSE believes that application-level learning takes place in the real world. Surrounding the student with many processes and methods of academia, utilizing hands-on experiential pedagogies, which results in truly transferrable knowledge and skills into the workplace and one's life.

College of Science and Education

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Board of Directors

Goldie H Burge, President, CEO, Member/Manager

Richard W Burge, Vice President, Member

Nicholas A Burge, Secretary, Member

Zachary D Burge, Treasurer, Member

Licensures: The College of Science and Education is "conditionally licensed" through the Arizona State Board for Private Postsecondary Education.

University Motto: With God -All Things Are Possible.

University Seal: TBD

University Colors: Green and Blue

University Mascot: Jaguar

University song:

Oh, hail to thee-Our Father,
The creator of our world.
We ask for your help and guidance,
As we take our journey forth,
To venture in to, all the wilds of nature
And the minds, of children, too.
Prepare us for the work ahead-
To live within your light,
And strive to use our learning
Here and in our community.
To forge a better world, From C.S.E.,
To Thee.

History

In the year 2000, the founder, Goldie H Burge founded her first school in Laveen, AZ. It was a Life Science-Based K-12 Charter school filled with Farm animals, gardening and expeditions. This hands-on, experiential learning environment, teaching to the “whole child” and learning through all modalities: Visual, Auditory, Kinesthetic and Tactile facilitated students of all backgrounds to become successful learners and productive citizens. The expeditions expanded from Arizona, across all 48 states in the US, to Costa Rica, Panama and Belize. The benefits garnered from these expeditions not only enhanced student learning in the content areas of History, Science and Geology, but the social and emotional gains were tremendous. The expeditions into the rainforests of Costa Rica, the marine experiences in Belize and the Indigenous Tribal interactions in Panama were life-changing for all who attended. Low-income minority students and students with Special Needs were blossoming by learning in such a multi-sensory, real-life manner that they were graduating at the top of their class and receiving full scholarships statewide.

As time passed, alumni revisited the school and relayed to Mrs. Burge that college was boring and they really missed all the hands-on learning and the expeditions. A light went on her head and the idea of opening a College was born. The many Biological Research Stations owned by the Burges sat empty all year except for the once -a-year expeditions scheduled for the students. Mrs. Burge felt these had been so perfect for her students, that they should be utilized by college-level students the rest of the year for both in-depth field studies and research. The extensive opportunities offered to both Education and Natural Science majors on the campus,

across AZ and abroad in Panama, Belize and Costa Rica were endless. Not to mention connections in Italy, Africa, and more.

So, the work began and the opening of the College of Science and Education in the Fall semester 2025 became a reality. The Laveen, AZ campus offers: A Barnyard full of over 100 farm animals, greenhouses and gardens, its own ZooQuarium Museum filled with exotic, non-domesticated living animals (over 100 species) and marine life (fresh and salt-water) along with hundreds of museum-preserved animal specimens which inhabit the Biomes displayed in the museum: Deserts and Grasslands, Mountainous Regions, Rainforests, and the Marine Worlds. Hands-on touch tanks, an Interactive Amphitheater, Biology and Chemistry Labs, Entomology Collections, a movie theater and even a Dinosaur Lab complete with Dinosaurs and fossil collections. Outdoor animal habitats boast, macaws, 28 species of breeding tortoises/turtles, with more to come. College Science students will be immersed in real live Labs and field studies, both on the campus and in many of the CSE Biological Field Stations in AZ, the United States, Costa Rica and Belize.

The existing K-12 charter school serves as a living functioning Lab school for all Education majors as well as all the expeditions, where students will learn how to teach through hands-on, experiential and discovery methodologies, known in research to be the most effective for all students, including special needs and the gifted. College Education majors will be able to be in real classrooms, trying out lessons and being mentored in these innovative teaching methods.

Experience a college environment filled with God's beautiful animals and plants, based in Christian principles and Faith and learn through "real life" experiences. God's earth and people will be opened to you and through experiences and expeditions, you will discover who you are, your place in the world and God's purpose for your life!

C.S.E. Goals

Let CSE educate you, so you can:

- educate and teach others
- continue your experiences to Preserve God's Earth
- work to serve global communities
- further your Faith to inspire the world
- and use your life to live through God!!!

Degrees Offered

The College of Science & Education offers curriculum, learning and research possibilities which lead to the Bachelor of Arts and Bachelor of Science degrees. Students are advised that degree program requirements may be offered in different modalities depending on locations of the coursework (online/on campus/off campus field study/abroad).

Baccalaureate Programs

Bachelor of Science

The Bachelor of Science degree is granted to students who complete all the requirements for the following areas:

Natural Sciences: Bachelor of Science-Biology

Minors available in the following emphasis areas:

- Agriculture/Horticulture
- Animal Husbandry/Animal Science
- Botany
- Ecology and Ecosystems
- Environmental Science
- Forestry
- Forest/Wildlife
- General Science
- Geology and Earth Sciences
- Marine Biology
- Sustainability
- Veterinary Science
- Wildlife Conservation
- Zoology

Bachelor of Science-Elementary Education

Minors available in the following emphasis areas:

- Elementary Education: Reading Emphasis
- Elementary Education: STEM
- Elementary Education: ESL/ESI/EL/TESOL

Bachelor's Degree Requirements for Degree Completion& Graduation:

• 120 credits (minimum) of college work (Inclusive of CSE General Education & degree requirements of at least one academic major) Must include at least one 3 credit course in Christian-Inclusive Religion.

All financial obligations to CSE are completely satisfied.

• A maximum of 6 credit hours of developmental course work (000-099) may be applied to the 30 credits of General Education Requirements of college work for graduation.

• At least 30 of the last 36 credit hours earned must be earned in residence at the College of Science & Education and/or any of its locations abroad. On-line courses offered by CSE are considered to be courses in residence. Specific majors may require more than the minimum 30 credits to be taken in residence at CSE. (See Degree Plans for each major.)

• A minimum cumulative grade point average of 2.0 for all work completed at CSE.

• A minimum grade point average of 2.0 for all courses taken in a major is required unless a particular major requires a higher-grade point average.

- A grade of C or better when the minimum acceptable grade is stated to be a C (a grade of C- will not suffice). Review departmental descriptions for details of specific degree requirements of each Bachelor's degree offered. Required coursework and Labs as well as required courses abroad may not be substituted with any transfer credit.

Learning Outcomes

College of Education Learning Outcomes:

1. Students studying in CSE's College of Education will broaden their understanding of how people learn and the need for children and adults to be more involved with nature, to connect with God's natural world. In today's modern society of technology, humans are lacking the spirituality of purpose and stewardship of God's creation-people. Through the connectivity of learning in nature, humans can relate to each other with forethought and civility to find goals and purpose in their lives. Educators graduating from CSE and experiencing its "real-life" immersion style learning, will be able to help their future students make necessary connections from within the classroom, to the outdoors and abroad, giving them a richer and broader understanding of their world and its inter-connectivity.

College of Natural Sciences Learning Outcomes:

1. CSE's Natural Science Majors will learn to study God's natural world with realistic hands-on, experiential learning expeditions on campus, in field studies both in the US and abroad. These total "real-life", immersion style studies will assist students in making real connections between God's natural world and the impacts of our modern society. It will provide students with realistic goals and outcomes for their chosen area of study and their purpose in the work that will be generated from their career choice. This realistic approach to learning should result in Natural Science endeavors that seek to improve the natural world for all of God's creatures and the people who live in it.

Bachelor Degree Plans

General Education Requirements (30 credits)

Communications (6)

ENG 090 Basic College Composition 3

ENG 101 Composition and Rhetoric (3)

ENG 102 English Literature (3).

Mathematics (3-6)

MAT 100 Mathematics for Teachers (3)

MAT 200 College Algebra I (3)

MAT 201 Statistics & Lab (4)

MAT 240 Modern Geometry (3)

MAT 245 Trigonometry (3)

MAT 250 Calculus I (4)

MAT 260 Calculus II (4)

Science (6-9)

ANTH 100 Anthropology & Lab (4)

ANTH 200 Paleontology & Lab (4)

BIO 201 General Biology & Lab (4)

BIO 202 General Biology II & Lab (4)

BIO 210 Plant Forms & Function (4)

BIO 215 Flora of Arizona & Lab (4)

BIO 220 Wildlife of Arizona & Lab (4)

BIO 221 Horticulture and Gardening & Lab (4)

BIO 290 Cell & Molecular Biology & Lab (4)

BIO 200 Plants and Gardening & Lab (4)

BIO 204 Animals in Nature & Lab (4)

CHEM 110 General Chemistry I & Lab (4)

CHEM 111 General Chemistry II & Lab (4)

CHEM 200 Organic Chemistry I & Lab (4)

CHEM 210 Organic Chemistry II & Lab (4)

GEOL 101 Geology I & Lab (4)

GEOL 110 Rocks & Minerals & Lab (4)

GEOL 150 Geology of Arizona & Lab (4)

GEOL 201 Geographical Information Systems I (4)

GEOG 100 World Geography (3)

PHYS 101 General Physics I & Lab (4)

PHYS 102 General Physics II & Lab 4(4)

PHYS 201 Astronomy & Lab (4)

POLS 100 American Government (3)

PSYCH 100 Psychology (3)

SOC 100 Sociology I (3)

Humanities (6)

GEOG 100 World Geography (3)

HIST 100 United States History I (3)

HIST 101 United States History II (3)

HIST 110 World History I (3)

HIST 111 World History II (3)

HIST 120 Arizona History (3)

HIST 150 History & Preservation of America's National Parks (3)

HIST 210 Ancient Civilizations I (3) (Option to take in Italy must be taken concurrently with ART 210 and Ital 100- a 2-week expedition.)

HIST 211 Ancient Civilizations II (3) (Option to take in Greece) (Option to take in Greece with HIST 330 Ancient Architecture and HUM 314 Mediterranean Cultures-a 2-week expedition.) When available.

PHIL 100 Philosophy I (3)

Christian Religion (3)

REL 100 Christian Living (3)

REL 150 History of Christianity (3)

REL 200 Religions of the World(Christian-Inclusive) (3)

Fine Arts (3)

ARTS 100 Art I (3)

ART 110 Drawing Fundamentals (3)

ARTS 200 Art History I (3)

ART 210 The Great Fine Arts Masters I (International travel required-2 weeks in Italy.) (4)

ART 250 Mixed Media Art (3)

MUSC 100 Music Through the Ages (3)

THEA 100 History of Theater (3)

College of Natural Sciences:

Bachelor of Science Degree Plans

Bachelor's Degree in Biology

Purpose-Objectives-Skills

CSE will provide varying opportunities in the field of Biology. This foundational Biology degree will build the basis for more in-depth studies in more specific Biological fields of study paving the way for higher level learning into a Master's or PHD program. Students will learn: Biological concepts, research topics and areas of specificity, with generalized coursework in all major areas of Biology both in the Plant and Animal Kingdom. Research techniques and skills will be learned on the required expedition to Costa Rica as well as understanding the Bio-diversity of living organisms and their place in the ecosystems on earth.

Outcomes and Careers

Scientists in Governmental, Industrial, Agricultural, Medical and Non-Governmental Organizations

Teacher of Biology/Science in K-12 public, private and parochial schools.

Wildlife, Environmental and Conservationist Scientists

State Game and Fish, US National Parks, and other community agencies

Environmental Impact Biologists for Industrial Companies, Government-US and state

Biology Major Degree Requirements:

Total credits required: 120

General Education Credits 30

Core Requirements (All course require a lab or field studies- included in credits) 78 credits

BIO 201 General Biology I & Lab (4)	BIO 210 Plant Forms & Function & Lab (4)
BIO 202 General Biology II & Lab (4)	BIO 301 Animal Behavior & Lab (4)
CHEM 110 General Chemistry I & Lab (4)	CHEM 111 General Chemistry II & Lab (4)
BIO 310 Ecology & Lab (4)	BIO 290 Cell & Molecular Biology & Lab (4)
BIO 350 Genetics & Lab (4)	GEOL 101 General Geology I & Lab/field studies (4)
BIO 401 Vertebrate Zoology & Lab (4)	BIO 402 Invertebrate Zoology & Lab (4)
BIO 450 Evolution & Lab (4)	MAT 201 Statistics (4)
BIO 410 Environmental Science & Conservation & Lab (4)	
BIO 490 Senior Field Research Project (4) (Option to complete abroad)	
BIO 431 Rainforest Zoology & Ecology (Costa Rica Rainforest Field study) (4) and	
BIO 430 Population Studies (Costa Rica Rainforest) (4) and	
BIO 420 Plant Taxonomy & Ecology (Costa Rica Rainforest) (4)	
BIO 480 Research Techniques and Practice (2)	

Choose 2 courses from below (8 credits):

BIO 440 Herpetology & Lab (4) BIO 441 Entomology & Lab (4) BIO 442 Ichthyology & Lab (4)
BIO 443 Ornithology & Lab (4) BIO 444 Mammalogy & Lab (4) ANTH 200 Paleontology & Lab (4)
PHYS 201 Astronomy & Lab (4) BIO 426 Desert Ecology & Lab (4)
BIO 424 Mountainous Regions Ecology & Field Studies (4)

Electives (4 credits): (Must be 300-400 level courses in any area of study)

College of Education:

*Note: All Education majors will be required to obtain an Arizona IVP Fingerprint Clearance Card.

Bachelor of Science Degree Plans

Bachelor's Degree in Elementary Education

Purpose-Objectives-Skills

CSE will provide Elementary Education students with a foundation of skills to become a successful educator igniting young minds for our future. Teaching to the “whole child” with innovative hands-on, experiential learning, students will have many opportunities to both learn as a college student in this manner as well as garner field experiences with K-12 students in our Lab School on campus. Students will learn: research-based teaching methodologies utilize curriculum with multi-sensory integration incorporated through individualized, differentiated techniques, learning centers and stations, outdoor labs, and true discovery learning with field studies and expeditions. These include: cross-country expeditions in the US and abroad into Costa Rica, Belize, and Panama. At CSE, you will grasp skills which will help you become the best teacher for all students of all ages. Join our “Journey To Learning” and fulfill your desire to teach!!!

Outcomes and Careers

Teach in public, charter, parochial, preschools, Head-Start and private schools.

Education Specialist in museums, and tourist venues

Educational Entrepreneur-Consultant to schools, workshops/seminars, specialist

Educational Specialist in Government and Grant applications-state, local and federal government

Educational Entrepreneur- Write Curriculum, books

Educational Curriculum Developer for Software programs and curriculum products

Elementary Education Major Degree Requirements: K-8

Total credits required: 120

General Education Credits 30

Core Requirements 63 credits

EDU 200 Foundations of Education & Lab (4)

EDU 220 Student Growth & Development: Prenatal to Adolescence & Lab (4)

EDU 310 Assessments, Monitoring and Reporting Student Progress & Lab (4)

PSYCH 311 Survey of Child & Adolescent Developmental Psychology & Lab (4)

EDESL 300 Structured English Language Immersion Methodology I (3)

EDU 320 Designing Curriculum & Instruction, Lesson Planning,
Modifications and Accommodations & Lab (4)

EDU 230 Classroom Management, Engagement & Learning Environments & Lab (4)

EDU 410 Math Methods & Strategies & Lab (4)

SPED 404 Survey of Disabilities: Mild to Moderate & Lab (4)

EDU 412 Literacy, Phonics and Reading Methods & Lab (4)

EDU 414 Literature Instruction and Engagement & Lab (4)

EDU 440 Reading Diagnosis, Remediation, Intervention & Dyslexia & Lab (4)

EDU 413 Language Arts/ELA Methods & Lab (4)

EDU 490 Student Teaching K-3 (6) 8 weeks

EDU 491 Student Teaching 4-8 (6) 8 weeks

Application Level Education Requirements: Minimum 19 credits

Choose one REQUIRED Expedition Abroad from the following : (Belize or Costa Rica)

2 week expedition: Costa Rica (9 credits)

EDU 480 Global Perspectives of Education (3) (On site in Costa Rica)

SPAN 200 Conversational Spanish (3)

HUM 310 Central American Cultures (3)

3 week expedition: Costa Rica (You will be staying in the primary rainforest .)

All of the courses above for the 2 week expedition plus-

BIO 431 Rainforest Zoology & Ecology (Costa Rica Rainforest) (4)

BIO 420 Plant Taxonomy & Ecology (Costa Rica Rainforest) (4)

2 week expedition: Belize (10 credits)

EDU 480 Global Perspectives of Education (3) (On site in Belize)

HUM 310 Central American Cultures (3)

BIO 435 Coral Reef Ecology (snorkeling required) (4)

3 week expedition: Belize

All of the courses above for the 2 week expedition plus-

ANTH 410 Mayan Culture & Field Study (4)

ANTH 412 Mayan Structures and Rituals & Field Study (4)

Choose one REQUIRED USA Expedition from the following: (You will be traveling with students on a charter bus) These are approx. 14-21 day expeditions during the spring.

Credits: (12)

EDU 497 Experiential & Discovery Education I (4) plus

EDU 496 Teaching Science & Health Methods: Field Studies (4) plus

EDU 498 Teaching Social Studies & Art Methods: Application Level (4)

Expeditions to choose from: (These rotate every four years with the K-12 school calendar)

Southern Regions of the US with a focus on: US History- The Colonization of America

New England Regions of the US with a focus on Colonization to Industrialization

Great Lakes Region of the US with a focus in American History and Industry

Western Region of the US with a focus on the geology of the Grand Staircase & fossils

These expeditions are 7-10 days and are less credits:

Credits: (10)

EDU 495 Experiential & Discovery Education I (2) plus

EDU 496 Teaching Science & Health Methods: Field Studies (4) plus

EDU 498 Teaching Social Studies & Art Methods: Application Level (4)

Expeditions to choose from: (These rotate every two years with the K-12 school calendar.)

Pacific Northwest Regions of The US with a focus on Pacific Coastal marine & forest studies.

Southwestern Regions of the US with a focus on Native American History & Geology of the Southwest.

Choose any other Required Electives at 300 or above levels to fulfill the 120 credit requirements.

Course Descriptions

College of Science & Education Course Descriptions

Undergraduate Courses

ANTH 100 Anthropology I and lab 4 credits: A course which introduces the four subfields of Anthropology: biological, sociological, linguistic and archeological. Students will analyze the biological, social and cultural dimensions of human variation. Prerequisites: ENG 101.

ANTH 200 Paleontology I & Lab 4 credits: This course introduces the study of fossils and dinosaurs. Students will identify and classify dinosaurs into groupings. Vertebrate and invertebrate fossils will be studied as well as

microorganisms, plants, and traces (impressions, burrows and trackways)..Field studies will include several fossil digs as well as Dinosaur museums and lab work in CSE's DINO Lab. Students will learn how to extract fossils with known methodologies which preserve the fossil within the rocks. Preservation techniques of the exposed fossils will be utilized and museum exhibits will be created for tours within CSE's DINO Lab. Some small group education of K-12 students will be exercised and presentations will be required. Fossil digs to Wyoming, Utah, New Mexico and Arizona will be required for this course. A look at the evolution of dinosaurs, the different time periods, and some of the theories of extinction will be discussed. Prerequisites: GEOL 110 & Lab or GEOL 101 & Lab.

ANTH 401 Mayan Civilizations 4 credits (Belize): A study of the Mayan Civilization as presented in the Mayan Ruins of Belize. Students will traverse several Mayan ruins in Belize and will get a firsthand look at the intriguing Mayan Civilization. Mayan Cultural information will be learned at the Mayan Chocolate tour and the intricacies of the beliefs and philosophies of the Mayans and the Gods they worshipped will be studied as students ascend into Mayan caves with artifacts and an underground water cave system. Prerequisites: none Must be taken with at least 2 other Belize based courses.

ANTH 412 Mayan Structures and Rituals 4 credits (Belize): An in-depth study of the Mayan pyramids, stellars, the ball court and all the structures of the Mayan community. The rituals they carried out and their beliefs with these rituals will be studied during the many excursions to Xunantunich, Cahal Pech, Marcos De Niza ruins, Bols cave, and cave tubing into the Mayan underworld. Prerequisites: Must be taken with at least two other Belize based courses.

ART 100 Elements of Art 3credits: The basic elements of Art will be explained and utilized in class as students complete specific Art works focusing on these elements: color, line, shape, form, perspective, texture, balance, and space. Different mediums will be used as students explore the basics of the world of Art. Prerequisites: none.

ART 110 Drawing Fundamentals 3 credits: This course will focus on the art of drawing and sketching. Different techniques and mediums will be utilized: cross-hatching, shading, charcoal, pencil, pastels, chalk. Students will draw/sketch a variety of topics from landscapes to still life. Students will create an Art Portfolio during this course. Some art materials will be required for this course. Prerequisites: none

ART 200 Art History 3 credits: Students will study the history of Art since its beginnings from Indigenous people to modern day art. Famous artists and their great works will be investigated and the changes in Art through the ages will be explored. Byzantine era Art, Impressionism, Pointillism, Cubism, Abstract, and Pop Art are a few of the styles of Art which will be studied in conjunction with the artists that created them. Some field trips to Art museums will be required. Prerequisites: none

ART 210 The Great Fine Arts Masters I (International travel required-2 weeks in Italy.) 4 credits: An in-person study of the greatest artists in history mixed with Music of the Italian Masters, including Opera. Visits to see the works of: Michelangelo, Da Vinci, Raphael, Rembrandt, and Botticelli to name a few will be studied in Italy. This learning excursion will immerse you into great works of Art and Music firsthand. The hidden meanings, motivations and long reaching effects of these great artists and musicians will be discussed. Prerequisites: ART 200. Corequisites: ITAL 100, and HIST 210.

ART 250 Mixed Media Art 3 credits: Through the creation of several art pieces, students will be utilized a variety of mediums such as: chalk, pastels, tissue paper, charcoal, watercolors, crayon, inks, acrylics, textiles and clay, to name a few. Some art materials will be required for this course. Prerequisites: ART 100

ART 311 Central American Indigenous Art I (Panama Indigenous Tribes Field Study only) 3 credits: This course takes you to Panama to investigate and learn the art forms and histories of three Indigenous Tribes: The Noge' Bugle, the Embera and the Kuna. Visits to their villages and learning their art forms firsthand embraces the roots of Indigenous people's art and their connection to the natural world. This is part of the Panama Expedition and will be taken concurrently with the other chosen courses. Prerequisites: none

ART 312 African Indigenous Art I (African Indigenous Tribes Field Study only)3 credits: This course takes you to Africa to investigate and learn the art forms and histories of Indigenous Tribes. Visits to their villages and learning their

art forms firsthand embraces the roots of Indigenous people's art and their connection to the natural world. This is part of the African Expedition and will be taken concurrently with the other chosen courses. Prerequisites: none, Must be taken with HUM 312 and BIO 449.

BIO 201 General Biology I & Lab 4 credits: This course studies biological concepts with an emphasis on components of the cell and their functions within the cell. The effects of genetic information on the cell from DNA to RNA to protein are investigated. The molecular and cellular levels of organization are studied with connections of structure and function. The Lab will reinforce the principles in BIO 201 with the extensive use of activities and experiments. These will further enhance the understanding of cell structure and function, and the contributions of the cellular components and cell membrane properties to it. metabolism, the flow of genetic information to the cell structure and cell division will be a focus. Prerequisites: none

BIO 202 General Biology II & Lab 4 credits: This is the second course of biological concepts focusing on the interactions of structure and function at the cellular, molecular and organismal levels of organization. The structure and function of plants are studied with their reproduction, photosynthesis and nutrition, as well. A variety of life forms are investigated focusing on life cycles, and characteristics, bacteria, eukaryotes, and archaea are included. Interactions of organisms as they pertain to ecological principles and varying levels are studied. An introduction to conservation principles is part of this course of study. Prerequisite: BIO 201 & Lab

BIO 210 Plant Forms & Function: This course covers the major concepts of botany and plant biology. Major plant groups will be explored including their reproduction, functions, adaptations and plant ecology. Plants will be studied within differing biomes. Prerequisites: BIO 201 & Lab, BIO 202 & Lab.

BIO 215 Flora of Arizona & Lab 4 credits: A survey of Arizona's diverse flora ranging from the deserts to mountainous alpine forests. Identification of varying vascular plants within their plant communities will be studied. Relationships of these flora with the geology of the area, the climate, and the wildlife, including humans will be discussed. Field trips will be required. Prerequisites: BIO 210 & Lab.

BIO 220 Wildlife of Arizona & Lab 4 credits: Students will study the diversity of wildlife in Arizona inclusive of mammals, birds, reptiles, amphibians, and fish. Field studies and labs will explore the natural history and ecology of these animals. Habitats, conservation, environmental impacts and wildlife management will be explored as well. Students will complete field identifications for many species and be able to recognize animal sounds, characteristics and habitats while classifying them into their proper taxonomical classifications. Prerequisites: none

BIO 221 Horticulture and Gardening & Lab 4 credits: This course will focus on the techniques and methods of gardening and horticulture. An emphasis will be on herbs and vegetables for family gardens and the sustainability of healthy food sources both in rural and urban environments. Heritage seeds will be utilized and comparisons of these to modern day seeds will be discussed. Propagation, pollination, floral plants, plants as insect repellents, Lab work in the campus gardens and greenhouses will be required. Prerequisites: none

BIO 290 Cell & Molecular Biology & Lab 4 credits: This course covers the structure and functional dynamics of living cells. Biochemistry of the cell, protein structure and function, DNA structure, repair and recombination, DNA replication, RNA structure, gene expression regulation, cell compartments and transport, and RNA transcription and translation. Labs will utilize microscopes and other equipment necessary to investigate a diversity of living cells. Prerequisites: BIO 210 & Lab, BIO 202 & Lab and BIO 210 & Lab.

BIO 301 Animal Behavior & Lab 4 credits: This course focuses on proximate and ultimate explanations of the diversity of animal behaviors. A focus on behaviors from an evolutionary and ecological perspective is investigated. Hypotheses will be formed and tested using the 4 main questions: development, mechanism, utility and evolution. Extensive hands-on activities with a diverse variety of live animals will be experienced as students grasp a better understanding of animal behaviors, how animals learn and communicate, their behaviors that facilitate survival and being able to thrive in their natural habitats. Prerequisites: BIO 201& Lab and Bio 202 & Lab.

BIO 310 Ecology & Lab 4 credits: The study of ecosystems and the interactions between organisms, their abiotic environment, and other biotic components of natural systems, the structure and function of biotic communities and the relationships of all these factors. Lab will include some field studies. Prerequisites: BIO 201 & Lab, BIO 202 & Lab.

BIO 312 Organic Farming and Horticulture & Lab 4 credits: Introduces the concepts of organic farming to produce fruits and vegetables. The course will focus on: crop production, crop diseases and pests and natural methods of prevention/cures, production regions and soils, types of crops, and marketing the organic product. Prerequisites: BIO 210 & Lab, and BIO 320 & Lab

BIO 320 Plant Physiology and Diversity & Lab 4 credits: This course of study covers basic plant process and the diversity of different plants. Focused topics include: plant water relationships, transport water balance, defense mechanisms, photosynthesis, mineral nutrition, photorespiration, sensory systems, growth hormones, and adaptation to differing environmental stresses. Lab time working with plants will be extensive. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 210 & Lab.

BIO 330 Scuba-Skin Diving & Data Research (Belize- Caribbean Sea: Scuba Dive Certification) 4 credits: This course will be taken in the pool at CSE prior to traveling to Belize for final dive certification. This course will lead to a SCUBA certification. Snorkeling/Skin Diving will be taught in the pool as well as the fundamentals of scuba diving. Students will be taught to be a certified dive instructor and will take their Open Water Certification dives in Belize. Dives will be off Ambergris Island, and Caye Caulker and will include: Hol Chan Marine Reserve, Shark Ray Alley, Coral Gardens, and more. A written test, pool tests and the open water dives are required to complete the course. A student who completes all coursework but does not get SCUBA certified may still obtain credit for the course if all components of the course are completed to the best of their capabilities. Prerequisites: Must pass specific swimming tests to enter the class. BIO 201 & Lab, BIO 202 & Lab, BIO 401 & Lab, BIO 402 & Lab. Co-requisite: BIO 421 & Lab, BIO 435 & Lab.

BIO 331 Plant Diseases & Lab 4 credits: This course introduces main groups of pathogens that cause plant diseases. Their identification, management, how they are spread and how they affect plants will be studied. Labs will have students investigate diseases as they complete field studies to farms and work in the campus gardens and greenhouses. Natural ways to fend off these diseases will be explored as well as modern day techniques and methodologies. The interaction of these plant diseases with their natural surroundings and human interactions will be discussed. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, and BIO 210 & Lab.

BIO 340 Forest Management & Sustainability (field studies) 4 credits: Management of North American forests and their sustainability in terms of deforestation, wildlife management, and fire management will be the focus of this course. Specifically, Arizona forest management will be studied through various field studies of Northern Arizona forests. Aspens, pines, oak, juniper, cedar and fir trees will be studied in conjunction with the Arizona Forest Service interactions. Students will learn methodologies and techniques of present-day forest management in comparison to historical trends from the past. Areas of forest fire devastation will be explored in the field and reforestation in those areas will be studied. Prerequisites: BIO 210 & Lab and BIO 320 & Lab.

BIO 341 Animal Anatomy & Lab 4 credits: This course studies the anatomies of major animal groups. Anatomical systems learned include: skeletal, lymphatic, digestive, vascular, endocrine, and nervous. Students will utilize skeletal specimens, anatomical specimens, and models as well as lab dissections to gain a broad understanding of basic animal anatomy. Comparisons of differing animal groups will be investigated. Comparative studies of the relationships of animal anatomies, evolution, functionality, habitats and the animal's ecosystem will be included. Prerequisites: BIO 201 & Lab, and BIO 202 & Lab.

BIO 350 Genetics & Lab 4 credits: The study of genetics, the methods and results of the transmission of hereditary characteristics. A hands-on approach to understanding genes and heredity through animal breeding programs on campus at CSE. Students will be involved in investigations into different genetic examples through domestic and exotic animal breeding programs. Prerequisites: BIO 201 & Lab, BIO 202 & Lab.

BIO 370 Biology of Algae and Fungi & Lab 4 credits: A study of fungi and non-vascular plants with emphasis of taxonomy, evolution, structure and ecology of these organisms. Lab work with fungi and algae will be utilized in application levels as well as in laboratory experiments. Prerequisites: Bio201 & Lab, Bio 202 & Lab, and Bio 210 & Lab.

BIO 380 Aquatic/Aquarium Habitats & Lab 4 credits: Students will investigate aquatic habitats and their necessities as compared to Aquarium habitats and how museums and aquariums work to maintain sustainable, healthy habit environments for marine life to thrive and proliferate while in captivity. Field studies of local fisheries will be utilized as well as our aquaculture ponds and fish breeding programs. Students will also work in our ZooQuarium with many aquatic aquariums utilizing both freshwater and saltwater habitats. They will be involved in the daily maintenance, care and understanding of the fine balance of water PH, nutrients, toxicities, water to animal ratio balances, etc. to maintain marine life for study and research, as well as for enjoyment. Prerequisites: BIO 201 & Lab, Bio 202 & Lab, BIO 310 & Lab.

BIO 390 Marine Sustainability & Lab 4 credits: The scientific study of marine life in both freshwater and salt-water ecosystems in relationship to our environmental impact to these ecosystems and their sustainability. Specific focus will be on our fishing methods and the endangerment to marine life and techniques and ideologies to maintain sustainable marine populations and diversity with fishing and use of the oceans. Included in this course is the relationships of marine life to other ecosystems in nature and their importance to the food chains and loss/maintenance of species. Prerequisites: BIO 201 & Lab, Bio 202 & Lab, BIO 310 & Lab.

BIO 401 Vertebrate Zoology & Lab 4 credits: The study of vertebrate animals, their morphology, evolution and ecology. Fishes, reptiles, birds, amphibians, and mammals will be studied with extensive, hands-on lab work utilizing museum specimens as well as a very comprehensive number of diverse species of live animals in our ZooQuarium, outdoor live animal habitats and our comprehensive Animal Science Barn. Prerequisites: BIO 201 & Lab, BIO 202 & Lab.

BIO 402 Invertebrate Zoology & Lab 4 credits: The study of invertebrate groups, their anatomy, structure, reproduction, ecology, mode of existence, natural history of invertebrates and taxonomy. Lab work with a variety of species utilizing preserved specimens, and CSE's large collection of insects and butterflies will be examined within this course in the lab as well as many live species in our ZooQuarium. Prerequisites: BIO 201 & Lab, BIO 202 & Lab.

BIO 410 Environmental Science & Conservation & Lab 4 credits: This course combines conservation and environmental science concepts. A broad look at biodiverse communities in the world and the effects of the environment on those ecosystems will be investigated. Conservation techniques and program histories will be studied as well as new discoveries to utilize conservation while preserving the environmental communities in a sustainable manner. Strategies being used to protect endangered species while maintaining human populations will be discussed. Lab time will utilize field studies. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 310 & Lab.

BIO 420 Plant Taxonomy & Ecology (Costa Rica Rainforest-2 weeks) 4 credits: A hands-on approach to the taxonomy of plants. Students will identify and classify a diverse variety of plants in the primary rainforests, coastal regions, and high mountain regions of Costa Rica. The ecosystems of the plants will be explored in relation to the other living organisms in this vastly biodiverse community. Travel abroad is required. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 210 & Lab. Corequisites: Corequisites: BIO 430, BIO 431 and BIO 480.

BIO 421 Marine Zoology & Ecology & Lab (Belize and Caribbean Field Study) 4 credits: This is a total immersion course studying the marine fauna and flora of the Caribbean. The course includes: taxonomic identification of differing species, environmental & societal impacts on marine ecosystems, mangroves, habitats and marine food sources. Species include: sea turtles, nurse sharks, rays, starfish, eels, conchs and hundreds of fish species. You will be snorkeling/diving off Ambergris Island, Belize and studying at our Belizean Blue Marine Biology Research station. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 401 & Lab, BIO 402 & Lab. Co-requisite: BIO 435 & Lab, BIO 330.

BIO 422 Sea Turtles (Costa Rica Field Study) 4 credits: The study of sea turtles, their habitats, reproduction, environmental endangerment, and in relationship importance within the marine community will be a focus. Specifically, Olive Ridley Sea turtles will be studied in Costa Rica. "Arribadas" will be investigated as sea turtles gather for nesting and laying their eggs in huge numbers. Students will engage with this endangered species during this field study. Students

will also learn how Costa Rica has developed a sustainable relationship with the native people and still be able to maintain a high standard of conservation of these amazing creatures. Prerequisites: Junior standing with at least 52 core credits of their biology major completed.

BIO 423 Endangered Species & Ecotourism (Costa Rica Field Study) 4 credits: A field study in Costa Rica, one of the most biodiverse countries in the world. Students will investigate a broad diverse number of endangered species in the wild, specifically in the rainforests and cloud forests. Their habitats and the loss of them will be explored, as well as the unique techniques to recover them which have been utilized in Costa Rica in tandem with their extensive development of Eco-tourism. A field study trip to Costa Rica's Zoo Ave and Rescate will be included as well as extensive field exploration in primary rainforests and cloud forests at our Piedras Blancas Biological Station on the Osa Peninsula, our Golfito Reserve Biological Research station, and our Quinta Clara Mountain Highlands Biological Research Station. Whale and dolphin studies in the Osa region will be included. Prerequisites: Junior standing with at least 52 core credits of a Biology major completed.

BIO 424 Mountain Regions Ecology & Lab 4 credits: The study of Arizona's Mountainous regions and the ecosystems residing within them. The relationships within the biotic communities of these regions, the wildlife, the diversity of plants and their sustainability will be studied. Several field expeditions will be taken, with a focus in the White Mountains of Northeastern AZ. Some overnight excursions will be required. Prerequisites: BIO 310 & Lab.

BIO 426 Desert Ecology & Lab 4 credits: A comprehensive study of the Sonoran Desert ecosystems of Arizona. Plant and animal species of this system will be identified and classified into Phyla and Class. Their relationships to each other in this ecosystem and the delicate balance that is necessary for both plant and animal species to survive will be a focus. Environmental impacts of human development on the desert landscape will be discussed. Conservation of this ecosystem and the integral piece that water plays will also be studied. Prerequisites: BIO 310 & Lab, and BIO 210 & Lab.

BIO 430 Population Studies of Animals (Costa Rica Field Study-2 weeks) 4 credits: This is an intensive interactive course in the rainforests of Costa Rica. Population studies of animals and insects will be undertaken. Data collected will become part of a long-term population study of these animals and insects of the Piedras Blancas Reservacion in the Osa Peninsula of the southern Pacific region of Costa Rica. Students will be responsible to identify, classify and record the population data in a statistical format usable in scientific research. The notebooks they keep will also document their knowledge of methods of actual scientific research in the field. Prerequisites: BIO 401 & Lab and BIO 402 & Lab. Corequisites: BIO 420, and BIO 431.

BIO 431 Rainforest Zoology & Ecology (Costa Rica Field Study-2 weeks) 4 credits: This is an immersive comprehensive study of the fundamental biological principles as expressed in the activities and structure of animals of the rainforest. Students will identify different animal species according to Phyla and Class as they learn taxonomic relationships between animals and their ecosystems. Anatomical features, and specializations related to nutrition, excretion, reproduction, respiration, locomotion and sensory perception of animals will be explored. Major groups of animals of the rainforest will be surveyed with attention to ecology, morphology, physiology, evolution and reproduction. Day and night hikes into the primary rainforests present students with real life animal observations and encounters which students learn how to document and place into data driven research formats. The rainforest habitats of these animals are investigated and the many interactions of differing species and their habitats are seen firsthand. What a great way to learn!!! Prerequisites: BIO 301 & Lab, BIO 401 & Lab, and BIO 402 & Lab. Corequisites: BIO 420, BIO 430 and BIO 480.

BIO 432 Microbiology 4 credits: The study of taxonomy, structure, metabolism, pathogens, interaction between microbe and host and applied microbiology will be studied. A lab will focus on biochemical tests, culturing and identification of unknown species. Microscopes and laboratory techniques will be utilized extensively in the lab. Prerequisites: BIO 201 & BIO 202, and BIO 210.

BIO 433 Entomology & Plant Relationships (Costa Rica Rainforest) (4) This course studies the relationships of insects and spiders with differing plant species in a tropical rainforest. Termites, ants, tarantulas, spiders and numerous

butterflies will be examined just to name a few. The interconnectivity of their biotic plant communities and their importance in the health of the rainforest will be a focus. Prerequisites: BIO 201, BIO 202 and BIO 210

BIO 435 Coral Reef Ecology & Lab (Belize and Caribbean Field Study) 4 credits: This course is the second part of a full immersion field study in the Caribbean. Taken with course BIO 421. An extensive study of the 2nd largest great barrier reef off Ambergris Island, Belize will be examined. Several dives will examine coral reef systems, their ecology, coral bleaching, life cycles of corals, identification of coral species, and the impacts of storms, humans, invasive species and history. The overall importance of coral reef ecosystems to ocean life and future marine species will be explored. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 401 & Lab, BIO 402 & Lab. Co-requisite: BIO 421 & Lab, BIO 330.

BIO 440 Herpetology & Lab 4 credits: The biological study of reptiles and amphibians of the world. Students will study their evolutionary history, global diversity, life history, phylogenetic relationships and general biology of these groups. Lab time will utilize extensive work with live species in our ZooQuarium, outdoor tortoise habitats, breeding programs, and species in the wild. Specific attention will be on reptiles and amphibians in Arizona and North America. An option to take this course in the Costa Rican rainforests with a focus on these groups in the rainforest ecosystem is available. Prerequisites: BIO 201 & Lab and BIO 202 & Lab, BIO 301 & Lab, and BIO 401 & Lab.

BIO 441 Entomology & Lab 4 credits: A study of the evolution, classification, biology and ecology of insects. Investigations of the role insects play in ecosystems of the world, human interactions and food production will be studied. Connections of Entomology into fields of medicine, forestry, agriculture, conservation and ecology are pertinent for careers in those areas. Labs include extensive field studies and use of museum specimen collections and live specimens. Prerequisites: BIO 201 & Lab, BIO 202 & Lab and BIO 402 & Lab.

BIO 442 Ichthyology & Lab 4 credits: A biological and ecological study of fishes, both cartilaginous and bony. Identification of species, anatomy, habitats, evolutionary histories, global diversity, phylogenetic relationships will be studied. Endangered species, conservation efforts and fishing controversies will be discussed in relationship to the ever-changing marine populations of fishes in both fresh water and saltwater habitats. Labs will involve students with varied live aquatic habitats in USE's ZooQuarium and field studies to local habitats. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 401 & Lab.

BIO 443 Ornithology & Lab 4 credits: The scientific study of birds of the world, predominately focusing on species in North America and birds in Arizona. Some field studies will incorporate birds of prey, nesting, and migratory birds. Students will learn to identify bird species by groupings, characteristics, songs/sounds and habitats. Bird anatomy, bird groups, environmental interactions and their habitats in the wild will be studied. An option to focus on tropical birds in the rainforests of Costa Rica is available as well. Prerequisites: BIO 201 & Lab and BIO 202 & Lab, BIO 301 & Lab, and BIO 401 & Lab.

BIO 444 Mammalogy & Lab 4 credits: The biological study of mammals of the world. Their structure, behavior, taxonomic relationship and life histories will be studied. Lab time utilizing live animals as well as museum specimens in the CSE ZooQuarium, Barnyard, and outdoor animal habitats will be utilized as well as some field studies. Students will investigate the mammal diversification of the world and the ecology of local mammalian fauna. Identification of mammals by physical characteristics, habitats, verbalizations and patterns in habitation will be explored. Prerequisites: BIO 201 & Lab and BIO 202 & Lab, BIO 301 & Lab, and BIO 401 & Lab.

BIO 445 Dendrology & Lab 4 credits: This course focuses on the identification and taxonomy of trees, shrubs and woody vines. Field studies will focus on North American trees and shrubs, with field studies in Northeastern Arizona and Southwestern American native species. Field studies will include data collection, species identifications and integration into the ecosystems of each area. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, BIO 210 & Lab, BIO 320 & Lab.

BIO 446 Beekeeping I & Lab 4 credits: A biological study of honey bees, their life cycle, biogeography, and comparative studies between honeybees in the wild and in an apiculture. Lab work will be with actual apiaries on campus. Beekeeping equipment, protective clothing, techniques, pollination ecology, economic and practices, current issues, Africanized bees, and environmental factors affecting honey production. The importance of honeybees in the world of agriculture and world food chains will be discussed. Prerequisites: BIO 320 & Lab, BIO 441 & Lab

BIO 447 Domesticated Animal Diseases I & Lab 4 credits: This course is specifically focused on pathogens found in domesticated animals, mostly produced for human consumption and or entertainment and the diseases they cause. Diseases affecting: cattle, sheep, horses, swine, goats, and poultry will be studied. Students will learn pathogen/disease identification, causes of proliferation, the effects of diseases on the animals, and the management and prevention of these common pathogens. Discussion of the interaction of these diseases with humans, other animals and the natural world will be explored. Prerequisites: BIO301 & Lab and BIO 401 & Lab.

BIO 448 Animal Production and Ethics & Lab 4 credits: The production of animals in terms of human consumption and usage will include: beef and dairy cattle, sheep, poultry, swine, and meat & dairy goats. Their anatomy, nutrition, genetics, breeding and body composition will be studied. Ethical methods of growth and development, livestock management, and food processing are explored. Food production, cuts of meat, USDA regulations and milk and egg management will be learned. Student lab time will be in the CSE Animal Science Barn with all of the animals listed above. Students will be required to physically handle and care for these animals during Lab and some class time. Prerequisites: BIO 301 & Lab and BIO 401 & Lab.

BIO 449 Zoological Animal Studies of Africa & Field Study Lab 4 credits: (This course can only be taken on the African Expedition) The study of animals in Africa, including endangered species. Students will go on an African safari to experience these animals in their native habitats. Discussions of environmental impacts involving specific species which are endangered will be included. This NOT a required expedition, but is available to all students. Prerequisites: This course MUST be taken with HUM 312 and Art 312.

BIO 450 Evolution Theory & Lab 4 credits: Evolution as presented in this course will expose students to the historical development of evolutionary theory, foundational data, its genetic basis, and current research, along with its correlation with Christian viewpoints of Evolution and how the two can be symbiotic. Prerequisite: BIO 201 and BIO 202.

BIO 470 Animal Husbandry & Lab 4 credits: The study of domesticated animals including: cattle, horses, goats, sheep, swine, and poultry in terms of both commercial and small family operations. Animal care, maintenance and management, habitats, nutritional needs, medicinal supplements, common maladies, vet care, breeding, production for food and other uses, entertainment and pets. Students will work in the CSE Animal Science Barn with all of these animals and have an active role with all aspects of this class. Vet visits will be a part of this class. Prerequisites: BIO 301 & Lab and BIO 401 & Lab.

BIO 480 Research Techniques and Practice 2 credits (Option to complete in Costa Rica-2 weeks): Students will learn differing techniques and equipment utilized in scientific research. They will work on understanding the structuring of a research project, collection of data, utilization of field notebooks, data analysis, statistical analysis and incorporate the understanding of causation and correlation in research. Field study trips will be incorporated. Prerequisites: Junior standing with at least 52 core credits of their biology major completed. Corequisite with Costa Rica Expedition: BIO 430, BIO 431 and BIO 420.

BIO 490 Senior Field Research Project 4 credits (Option to complete in Costa Rica): A capstone course for students majoring in a biological field. Seniors will complete an approved research project in the field of biology utilizing internship experiences, field research and library studies. The project will be completed in written format and is required to graduate. Prerequisites: BIO 420, BIO 430, BIO 425 & BIO 480. (Marine Biology Majors: BIO 421, BIO 431, BIO 330 and BIO 480.)

BUSMG 300 Business Management I 4 credits: A beginning level course in the basic tenets of Business Management. Areas covered include: Marketing, Labor Force, Production/Services, Finances, Payroll, Taxes, Cost/Profit Analysis and Laws pertaining to the running of a small business. Prerequisites: MKT 200, and ENT 200.

CHEM 110 General Chemistry I & Lab 4 credits: This course introduces the basic principles of chemistry: behaviors of solids, liquids, gases, and solutions, the concept of molecular theory, building blocks of matter, and chemical change processes. Experiments in the lab will include safety measures, measurement, techniques and methods of analysis such as molar mass determination, etc. Prerequisites: Math 200 College Algebra I.

CHEM 111 General Chemistry II & Lab 4 credits: Students will learn to characterize chemical compounds, mixtures and their reactions in this course. Studies of thermodynamics, equilibrium, reaction rate, electrochemistry and the process of chemical change will be a focus. Laboratory principles of measurement, techniques, lab safety and methods to investigate thermodynamics and kinetics will be explored in the lab. Prerequisites: CHEM 110 & Lab, Math 200.

CHEM 200 Organic Chemistry I & Lab 4 credits: The theory and practice of Organic Chemistry. Prerequisites: CHEM 110 and CHEM 111.

CHEM 210 Organic Chemistry II & Lab 4 credits: The theory and practice of Organic Chemistry II. Prerequisites: CHEM 210.

ECED 200 Foundations of Early Childhood Education & Lab 4 credits: The history of Education, philosophies, research, and political and legal perspectives will be studied. An understanding of the progression of Education in the US will be analyzed in terms of where education is today in the US and the world. Students will explore the differing theories of learning research and compare and contrast differing models of education and learning, especially in relationship to Early Childhood. New developments and trends in Early Childhood Education will be viewed in some field studies. Prerequisites: ENG 101

ECED 225 Early Childhood Typical and Atypical Behaviors, Growth & Development, Interventions & Lab 4 credits: This course examines developmental milestones of typical and atypical student behaviors in early childhood. Students will evaluate gifted attributes and disabilities among students from Birth to Grade 3 in early childhood school settings. Interventions for atypical behaviors will be discussed. The role IDEA plays in these early childhood school settings will be explored. Growth and development of the young child will focus on brain development as well as social, emotional and physical characteristics. Differentiated, individualized instruction will be explained, providing accommodations for pathways to success. Observations will be required. Prerequisites: ECED 200

ECED 250 Instructional Design, Lesson Planning, Modifications & Accommodations & Lab 4 credits: This course covers: Lesson Planning, Curriculum mapping, creation of age/developmentally appropriate activities for both direct and indirect instruction, individualized curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, outdoor education, experiential and discovery learning, movement and awareness of student interactions within curricula which enhance ESL student learning and, positive social and emotional development for all early childhood students. Techniques and strategies to utilize assessments to drive curriculum, modify curriculum and make accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: EDU 200, and Psych 311.

ECED 310 Assessments, Evaluation, Monitoring and Reporting Student Progress & Lab 4 credits: Students will learn about the different styles and types of assessments for monitoring student progress. They will discuss the benefits and validity of these. Norm-based assessments, state assessments and teacher prepared assessments will be examined. Students will learn how to create valid tests and methods of grading (subjective vs objective). Formative and Summative assessments will be included. Progress reporting will be explained and the importance of monitoring student progress. Utilization of assessments on a variety of levels to drive curriculum and lesson planning will be covered. Students will practice this in class using student tests, state standards and curriculum mapping/planning. Prerequisites: EDU 230

ECED 400 Classroom Management, Guidance, Engagement & Learning Environments & Lab 4 credits: Students will learn a multitude of strategies to handle a variety of behaviors with early childhood students, including those with disabilities. Management models, motivational techniques, scheduling, room placement of activities, and student movement within the learning environment are all factors which will be explored. Students will learn how to structure and plan a learning environment for a student-centered classroom with learning activities using: multi-sensory integration, individualization, differentiated instruction, hands-on learning and engaging motivating tasks promoting a positive classroom culture. Field Studies will include interaction with students and teachers in an early childhood classroom environment of this type of model. Prerequisites: EDU 200, and EDU 220.

ECED 401 Development of Nutrition, Health, Health Care & Safety: Birth to Grade 3 3 credits: This course covers sound nutritional practices, good health parameters, health care guidelines and safety in the home and school environments for the young child. It includes managing the school environments, both indoor and outdoor, with safety procedures and protocols for young children. Factors involving all aspects of a child's development: physical, emotional and social are examined and scheduling their activities based on age-appropriateness is emphasized.

ECED 406 School, Family, Child, Community Relationships & Cultures 3 credits: This course will explore community, school, family and child cultures. A focus will be on understanding the influences and interactions of all these factors which impact the young child's learning, development and behavior. Emphasis will be placed on creating positive relationships between all these factors as well as the classroom environment. Prerequisites: ECED 200

ECED 440 Reading Assessments, Diagnosis, Remediation, Intervention & Dyslexia for Early Childhood & Lab 4 credits: This is a comprehensive course covering the Early Childhood diagnoses of all areas in Corrective Reading. Extensive Individual Reading Assessments will be taught covering: Letter Recognition/Sounds, Phonic Analysis, Structural Analysis, Sight Words, Word Attack Skills, Visual Analysis and Comprehension Skills, to name a few. Students will be required to test a student in a school, document and analyze the results and create a remediation/Intervention Plan for that student. Then the Corrective Reading Plan will be carried out with the student during school hours. At the end of 6 weeks, testing will re-occur and final progress results will be written in a case study paper. Students will learn how to identify the signs and symptoms of Dyslexia and the methods of best practices to use with these students will be included as well as programs that can be applied to them for Remediation and Intervention (Title I, etc.) Prerequisites: EDU 310 or ECED 310 depending on major.

ECED 490 Student Teaching Grades K- 3 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

ECED 491 Student Teaching Birth to Pre-school Practicum 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

ECED 495 Early Childhood Math Methodologies 3 credits: Instructional teaching methods for Math in the early childhood years will be investigated. An emphasis on multi-sensory integration along with application Math activities will assist early childhood majors in their lesson planning and curriculum development. Prerequisites: ECED 250

EDESL 300 Structured English Language Immersion Methodology I 3 credits: Students will examine the theoretical principles of language acquisition and the role of culture. The fundamentals of the educational foundations of Structured English Immersion (SEI), the historical and legal aspects and other programs for SEI learners will be studied. Students will identify strategies to promote development and improved student achievement for English Language development. Students will plan, deliver and evaluate standards-based instruction for English language learners through the use of the Universal Design for Learning. Prerequisites: EDU 200

EDESL 301 Structured English Language Immersion Methodology-Early Childhood I (3 credits): Students will examine the theoretical principles of language acquisition and the role of culture. The fundamentals of the educational foundations of Structured English Immersion (SEI), the historical and legal aspects and other programs for Early Childhood SEI learners will be studied. Students will identify strategies to promote development and improved student achievement for English Language development in Early Childhood years. Students will plan, deliver and evaluate standards-based instruction for English language learners through the use of the Universal Design for Learning. Prerequisites: EDU 200

EDESL 365 ELL Curriculum and Instructional Methods & Lab 4 credits: Methodologies for the teaching of all subject areas to ELL learners will focus on strategies most successful with ELL children. Interactive tasks and activities which promote the necessity to speak and interact with other students will be emphasized. Development of integrated multi-sensory curricula will be a focus. Linguistic, developmental, cognitive and sociocultural factors will be considered when examining different methods and materials for curriculum usage. Hands-on, experiential methodologies will be stressed. Prerequisites: EDESL 395

EDESL 385 Linguistics & Lab 4 credits: This course teaches the fundamentals of linguistics. Psycholinguistics, sociolinguistics, and first and second language acquisition will be emphasized. Students will explore research-based methods of incorporating linguistic principles into their teaching practices and methodologies. Prerequisites: EDESL 300

EDESL 395 ELL Assessments & Lab 4 credits: Students will examine the principles of and for evaluating and structuring assessments for ELL students. Students will explore the varied types of assessments used in ELL evaluation as well as the methodologies utilized as required by federal and state laws. Students will view these assessments in terms of student identification, program placement, and instructional techniques. An emphasis will be on assessment task integration into the curriculum and improved learning for ELL students. Prerequisites: EDESL 300

EDESL 412 Literacy, Phonics and Reading Methods for ESL Students& Lab 4 credits: Students will learn how to teach Reading through a variety of methods including both phonetic and linguistic approaches, hands-on activities focusing on skill development, book making through Language Experience, literature books, creating a “print-rich” environment and engaging students in reading. Direct instruction and individualized activities utilizing a multi-sensory model and strategies to modify and accommodate these as needed for differentiating instruction for all learners, including ESL and students with disabilities. Specific methodologies for ESL students will be utilized through verbal and auditory interactions, allowing opportunities for Reading practice. Prerequisites: EDU 320 and EDU 440.

EDESL 490 Student Teaching Grades K-3 ESL Emphasis 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the University Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDESL 491 Student Teaching 4-8 ESL Emphasis 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDU 200 Foundations of Education & Lab 4 credits: The history of Education, philosophies, research, and political and legal perspectives will be studied. An understanding of the progression of Education in the US will be analyzed in terms of where education is today in the US and the world. Students will explore the differing theories of learning research and compare and contrast differing models of education and learning. Some field studies are included.

Prerequisites: ENG 101

EDU 220 Student Growth and Development: Prenatal to Adolescence & Lab 4 credits: A comprehensive study of historical and theoretical perspectives on the growth and development of the child. Physical, social, cultural, emotional, language, cognitive and personality development are the main topics covered. Environmental and Hereditary factors in a child's home and the extent of their impact on child development will be discussed as well as the impacts of technology on the child brain. Prerequisites:

EDU 230 Classroom Management, Engagement & Learning Environments & Lab 4 credits: Students will learn a multitude of strategies to handle a variety of behaviors with all students, including those with disabilities. Management models, motivational techniques, scheduling, room placement of activities, and student movement within the learning environment are all factors which will be explored. Students will learn how to structure and plan a learning environment for a student-centered classroom with learning activities using: multi-sensory integration, individualization, differentiated instruction, hands-on learning and engaging motivating tasks promoting a positive classroom culture. Field Studies will include interaction with students and teachers in a school environment of this type of model. Prerequisites: EDU 200, and EDU 220.

EDU 270 Instructional Methods for STEM & Lab 4 credits: This course will emphasize a "hands-on" approach to teaching STEM. Project-based activities, simulations, and model creations will be explored as students create lessons, projects and activities for students based on curriculum standards integrating Science, Technology, Engineering and Math. Examination of a variety of curricula available to obtain or create will be examined. Curriculum mapping for specific grade spans will be completed as well as several application-level STEM projects and activities for students of varying abilities, including students with disabilities. U.S.E.'s many Science and Engineering Labs will be utilized during classes and labs. Prerequisites: EDU 320

EDU 280 Experiential STEM Instruction & Tools & Lab 4 credits: This course will focus on many of the tools, safety, physical environments and budgets necessary to create a functional hands-on STEM learning environment. Grants available for STEM will be explored. Observations of STEM programs and projects will be examined. Prerequisites: EDU 270.

EDU 310 Assessments, Monitoring and Reporting Student Progress & Lab 4 credits: Students will learn about the different styles and types of assessments for monitoring student progress. They will discuss the benefits and validity of these. Norm-based assessments, state assessments and teacher prepared assessments will be examined. Students will learn how to create valid tests and methods of grading (subjective vs objective). Formative and Summative assessments will be included. Progress reporting will be explained and the importance of monitoring student progress. Utilization of assessments on a variety of levels to drive curriculum and lesson planning will be covered. Students will practice this in class using student tests, state standards and curriculum mapping/planning. Prerequisites: EDU 230

EDU 312 Community & Family Involvement in Learning Environments 3 credits: A survey of the Community Opportunities for integration into the learning environment. Community Service, Service Learning activities and tasks which involve families and school/learning environments will be discussed. The importance and inter-connectivity of these type of activities and events will be studied. Prerequisites: none

EDU 320 Designing Curriculum & Instruction, Lesson Planning, Modifications and Accommodations & Lab 4 credits: This course covers: Lesson Planning, Curriculum mapping, creation of age/developmentally appropriate activities for both direct and indirect instruction, individualized curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, and awareness of student interactions within curricula which enhance ESL student learning and, positive social and emotional development. Techniques and strategies to utilize assessments to drive curriculum, modify curriculum and make

accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: EDU 200, and Psych 311.

EDU 321 Multi-Sensory STEM Integration Design, Planning & Instruction & Lab 4 credits: This course will guide students through management and set up of a Multi-Sensory STEM program spanning many grade levels. A framework for age-appropriate STEM projects, lessons and activities for differing grades will be studied. Direct instruction and independent learning activities will be examined and developed. Students will be required to plan a lesson with STEM activities and teach this lesson to a classroom of students in CSE's Lab school. Students will evaluate and modify these lessons. Accommodations and differentiated accommodations for students with disabilities will be implemented. Prerequisites: EDU 320, and EDU 270.

EDU 322 Educational Technology 4 credits: Research and theories on the use of technology in the classroom will be explored. An understanding of age appropriateness in conjunction with brain development and learning dynamics for students will be researched. Varying types of technology beyond the use of computers and phones will be utilized. Practical uses of a multitude of technology in the production of work, and completing research will be emphasized. Prerequisite: ENG 101

EDU 360 Research Theories & Foundations of Language and Literacy 3 credits: Theories and research on the foundations of Language and Literacy and development of these in children will be discussed. Brain-based research as well as influential factors in the child's environment, including screens and technology and the effects of these on their language and literacy development will be studied. Prerequisites: EDU 220

EDU 390 Education Leadership K-12 3 credits: A survey of leadership roles in the field of Education. These include areas beyond schools such as Museums, community centers, camps, etc. Types of leadership styles will be explored as well as effective leadership in an educational environment. Strategies for employee/volunteer empowerment will be discussed. Prerequisites: EDU 200

EDU 406 Family, Child, Community Relationships/Support & Cultures: This course will explore community, school, family and child cultures. A focus will be on understanding the influences and interactions of all these factors which impact a child's learning, development and behavior. Emphasis will be placed on creating positive relationships between all these factors as well as the classroom environment and support systems available to children and their families. Prerequisites: EDU 220

EDU 410 Math Methods & Strategies & Lab 4 credits: Students will analyze content, materials and methods of teaching math, with differentiated instructional methods, to include all students, including the gifted as well as students with disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. Students will learn how to design hands-on, real-life, multi-sensory activities to teach math skills in a student-centered environment. An emphasis will be on individualized activities and integration with other content area disciplines, while teaching to the state standards and beyond. Prerequisites: EDU 230, EDU 310, EDU 320, and SPED 404.

EDU 412 Literacy, Phonics and Reading Methods & Lab 4 credits: Students will learn how to teach Reading through a variety of methods including both phonetic and linguistic approaches, hands-on activities focusing on skill development, book making through Language Experience, literature books, creating a "print-rich" environment and engaging students in reading. Direct instruction and individualized activities utilizing a multi-sensory model and strategies to modify and accommodate these as needed for differentiating instruction for all learners, including ESL and students with disabilities. Prerequisites: EDU 320 and EDU 440.

EDU 413 Language Arts/ELA Methods & Lab 4 credits: Students will analyze content, materials and methods of teaching Language Arts with differentiated instructional methods, to include all students, including the gifted as well as students with disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. The conventions of writing, writing formats, and grammar will be covered and exploration of methods to integrate these skills into other content disciplines will be discussed. Students will learn how to design hands-on, real-life, multi-sensory activities to teach Language Arts skills in a student-centered environment. An emphasis will be on individualized activities, while teaching to the state standards and beyond. Prerequisites: EDU 230, EDU, 310, EDU 320, and SPED 404.

EDU 414 Literature, Reading & Writing Instruction and Engagement in Content Areas & Lab 4 credits: The use of literature books in the classroom will be emphasized with the differing genres, authors and critical analysis of each work. Emphasis will be placed on integrating Literature with Social Studies, History, Science and other content areas. Students will design and create activities to accompany books, as well as design programs to engage and motivate students about Reading Literature. Integration with ELA and Writing Skills will be a focus along with assessments for Literature. Prerequisite: ENG 101, EDU 230, and EDU 320.

EDU 422 Secondary Teaching Methods & Lab 4 credits: Curriculum in the Secondary grades using a student-centered, multi-disciplinary, hands-on approach is emphasized. Students will utilize curriculum mapping, project-based learning, real life hands-on activities, expeditions, simulations and experiential learning techniques as they design and carry out lessons in a variety of content areas. They will base their lesson planning on integrating state standards from differing disciplines, while also providing for differentiated instruction, varying strategies and using multisensory integration.

EDU 440 Reading Assessments, Diagnosis, Remediation, Intervention & Dyslexia & Lab 4 credits: This is a comprehensive course covering the diagnoses of all areas in Corrective Reading. Extensive Individual Reading Assessments will be taught covering: Phonic Analysis, Structural Analysis, Sight Words, Word Attack Skills, Visual Analysis and Comprehension Skills. Students will be required to test a student in a school, document and analyze the results and create a remediation/Intervention Plan for that student. Then the Corrective Reading Plan will be carried out with the student during school hours. At the end of 6 weeks, testing will re-occur and final progress results will be written in a case study paper. Students will learn how to identify the signs and symptoms of Dyslexia and the methods of best practices to use with these students will be included as well as programs that can be applied to them for Remediation and Intervention (Title I, etc.) Prerequisites: EDU 310 or ECED 310 depending on major.

EDU 445 Reading Assessments & Intervention Practicum Grades K-8 4 credits (8 weeks): Nationally accepted Reading Assessments will be examined and the appropriateness of their uses for regular classroom instruction, Title I Intervention, SPED Resource Rooms and Tutoring. Students will learn to analyze assessment data and plan for Intervention. They will directly work under the direction of a teacher carrying out reading intervention activities which were determined from the child's assessment. Final evaluation of these interventions will be completed. Prerequisites: EDU 440

EDU 451 Early Childhood Special Education & Lab 4 credits: An overview of Special Education of the young child, birth to grade 3. This course covers the basic characteristics, behaviors, developmental, cognitive and linguistic disorders in young children and how SPED is approached in a school setting for these children. A brief look at the assessments, evaluations and monitoring of young children with disabilities is included. Prerequisites: EDU 220

EDU 470 STEM Integration into Multiple Disciplines, Simulations & Lab 4 credits: The focus of this course will be to create large projects, simulations, and programs which will integrate other content areas. A portfolio of these will be created for student use when they are an instructor in a STEM learning environment. Prerequisites: EDU270, EDU280 and EDU 321

EDU 480 Global Perspectives in Education 3 credits: (Field Study abroad in Costa Rica or Belize) : Students will gain perspective of differing educational systems in underdeveloped countries and compare and contrast these systems and their areas of success. Students will be visit active classrooms in these countries and will interact with students and educational staff. Discussions of possible applications to classrooms in the US will be discussed. Prerequisites: **Must be taken concurrently with EDU 495 or EDU 497, and EDU 496.**

EDU 490 Student Teaching Grades K-3 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence **MUST** be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed **BEFORE** any Internship can be taken.

EDU 491 Student Teaching Grades 4-8 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence **MUST** be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed **BEFORE** any Internship can be taken.

EDU 492 Secondary Student Teaching Grades 9-12 6 credits (8 weeks): Secondary teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence **MUST** be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed **BEFORE** any Internship can be taken.

EDU 495 Experiential & Discovery Education I 2 credits: An Introduction to Discovery and Experiential learning for all age students. Techniques of “Teaching to The Moment”, Multi-sensory integration, Multi-Disciplinary approaches to instruction will be taught and experienced while on these expeditions abroad. Students will experience for themselves this approach to learning and learn how to integrate these methods into their classrooms. Prerequisites: EDU 220, and EDU320

EDU 496 Teaching Science & Health Methods 4 credits Field Studies Abroad required: A focus will be to teach Science with a variety of strategies, lessons and activities through a multi-sensory, hands-on approach. Experiential and discovery learning will be experienced firsthand when taking the portion of this course abroad. Real Science expeditions will be utilized to demonstrate to the education student “how” to integrate real life experiences into lessons and activities that are engaging and exhibit high retention rates and how authentic assessments can be created in conjunction with this model of teaching Science. Multi-sensory integration, “learning by doing” and transferring those activities to paper and pencil, research and models, etc. will be emphasized. Classes will be held in school classrooms, and will require classroom observations and interactions with students at U.S.E.’s Lab school, ZooQuarium, Barnyard, Agricultural Gardens & Greenhouses, W.I.L.D.S. Area and the Biology & Chemistry Labs. Prerequisites: EDU310 and EDU 320.
Must be taken concurrently with EDU 495 or EDU 497, and EDU 498

EDU 497 Experiential & Discovery Education II 4 credits: An intensive field experience with Discovery and Experiential learning for all age students. Techniques of “Teaching To The Moment”, Multi-sensory integration, Multi-Disciplinary approaches to instruction will be taught and experienced while on these expeditions abroad. Students will experience for themselves this approach to learning and learn how to integrate these methods into their classrooms. Authentic assessments will also be explored with this model of learning. Prerequisites: EDU 220, and EDU320

EDU 498 Teaching Social Studies & the Arts Methods 4 credits: Field Studies abroad required: A focus will be to integrate the Arts into Social Studies and History through a variety of strategies, lessons and activities. Experiential and discovery learning will be experienced firsthand when taking the portion of this course abroad. Real cultural expeditions will be utilized to demonstrate to the education student “how” to integrate real life experiences into lessons and activities that are engaging and exhibit high retention rates. Multi-sensory integration, “learning by doing” and transferring those activities to paper and pencil, research, art productions, etc. will be emphasized. Classes will be held in school classrooms, and will require classroom observations and interactions with students at U.S.E.’s Lab school. Prerequisites: EDU 320

EDUL 490 Service Leadership Internship 6 credits (8 weeks): Students will be engaged in an 8 week internship or combination of two 4 week internships at a learning environment other than a school classroom. Museums, Zoo Programs, Community Outreach programs, etc. They will be involved in the daily operations of these environments as well as assist in creating an exhibit or activity appropriate for children, which will enhance their overall experience at the specific environment they are assigned to work within.

ENG 090 Basic College Composition 3 credits: A course which develops the necessary language and writing skills to be able to complete college essays and research papers successfully. This is a remedial writing course which does not count towards graduation but is required to be completed by entering college students who did not pass the college entrance requirements to take ENG 101. A grade of C or better MUST be acquired from this course before being able to take ENG 101.

ENG 101 Composition and Rhetoric 3credits: Students will learn to write fluent English through reading and writing a variety of papers, essays and research papers. A grade of C or better is required for this course. Prerequisites: Pass ENG 090 with a C or better or fulfill CSE's entrance requirements.

ENG 102 English Literature 3 credits: Different forms of literary genres of poetry, fiction and drama will be read and discussed. Classical literature will be compared to modern literature through discussion and writing comprehensive essays. Extensive reading and writing are required in this course. Prerequisites: ENG 101 with a grade of C or better.

ENG 310 Basic Grant Writing 3 credits: A course providing the basic fundamentals of successful grant writing. Students will learn the differences between Private and Government Grants. Students will write a grant as a final project for the class. Prerequisites: ENG 101 with a grade of C or better.

ENT 200 Entrepreneurship I 4 credits: This course covers the basics of Entrepreneurship, the laws, financial systems, work load, risks and profit/losses. Students will create a small business plan for a cottage industry style business. Prerequisites: none

ENV 301 Sustainability I & Lab 4 credits (Option to complete in Costa Rica): The study of the idea of sustainability as practiced in the US and in other countries. Theories, modern methodologies and interactions of humans with their biotic surroundings and the links between the sustainability of both humans and the natural world are discussed. Field trips to sustainable community examples will be required. Prerequisites: BIO 201 & Lab, BIO 202 & Lab, and BIO 210 & Lab.

ENV 302 Sustainability II & Lab 4 credits (Option to complete in Costa Rica): Practical application of the principles of sustainability will be studied in an internship, community service, or other similar project within a sustainable community or farm. Representations of a variety sustainability examples will be included. Prerequisites: BIO 210 & Lab, and ENV 301 & Lab.

GEOG 100 World Geography 3 credits: A study of the world's geographical regions including: continents, countries, states, cities, rivers, lakes, oceans, seas, islands, mountains, desert, and plains. Maps will be utilized to study the relationships of geographical land forms within different continents and their effects on civilizations and countries. Students will create a Geographical Portfolio of Maps of the world and be able to identify pertinent items, read and understand how to use Keys and grasp basic concepts of how geography plays a major role in the environment, economics, sustainability and governments of separate countries both within their continent and the entire world. Prerequisites: none

GEOL 101 General Geology I & Lab 4 credits: This course will study land forms and the forces which created them. The materials, structures and surface features of the earth and their history will be investigated. Physical examples of these will be explored during field studies. The effects of these earth processes on the living organisms will be discussed. Extensive field studies and lab work will be required for this course. Some weekend day field trips may be required. Prerequisites: none

GEOL 102 General Geology II & Lab 4 credits: Historical perspectives of the earth's land formation, volcanic islands, continental shelf movements and their shifts throughout history will be explored. The effects of this geological formations in the earth and the living organisms will be studied. Field studies will be utilized and required. Prerequisites: none

GEOL 110 Rocks & Minerals & Lab 4 credits: A comprehensive study of rocks and minerals with an emphasis on classification into the three main categories: Sedimentary, Metamorphic and Igneous. Their physical properties, and occurrences will be studied in the lab and in field studies. Some crystallography will be investigated. Prerequisites: none

GEOL 150 Geology of Arizona & Lab 4 credits: The principles of the historical and physical geology o as they apply to Arizona's geology. The Grand Staircase, Volcanic regions and the Grand Canyon will be a focus. Some field trips will be required. Prerequisites: GEOL 101 & Lab.

GEOL 201 Geographical Information Systems I 4 credits: (GIS) The technology for the creation, display, modification and analysis of spatial information. Students will develop knowledge of GIS, familiarity of the computer software, and competence in geographic databases as they explore the Geographic Information System. They will use this in conjunction with field studies as they use this database to map areas, and complete many differing research topics. Prerequisites: GEOL 101 & Lab.

GEOL 220 Soils Chemistry & Lab 4 credits: This course studies the chemical properties, chemical composition and chemical reactions important in soil systems. Students focus on: acid/base chemistry, chemical thermodynamics and kinetics, speciation, equilibrium, solubility relationships, REDOX reactions and surface sorption reactions. Labs will engage students in soil analysis to examine nutrients, transport and fate in agricultural systems, soil toxicities and contaminated soil systems. Soils from differing environments will be collected and analyzed as students learn the methodologies within the lab to determine outcomes of soil analysis. The importance of soil analysis in terms of plant growth, animal consumption of plants from a specific soil and possible human contamination from such soils will be investigated. Case studies of soil contamination and human and animal mortalities will be studied. Prerequisites: CHEM 110& Lab and CHEM 111 & Lab.

GEOL 300 Stratigraphy and Sedimentation & Lab 4 credits: This course introduces the principles of stratigraphy, processes and materials of sedimentation. Sedimentary layers in the earth and their historical significance in the ever-evolving land forms. Studies of and interpretation of sedimentary rocks, sedimentary structures and stratigraphic techniques will be utilized in Lab. Field studies will be required. Prerequisites:

GEOL 400 Volcanoes and Geothermal Entities & Lab 4 credits: The study of volcanoes, their land formations and geothermal entities evolving from their connectivity will be explored. This course will require an expedition to Yellowstone National Park to gather firsthand information of geysers, hot springs and volcanic history. A study of volcanoes in Costa Rica will be included in the expedition to Costa Rica. Lab studies of Igneous rocks and human uses of these will be examined. Prerequisites: GEOL 101 & GEOL 102

HIST 100 United States History I 3 credits: The history of the United States from the 1400's to and including the Civil War will be covered. The usage of filmed documentaries, full length movies, historical readings, first-hand accounts and primary sources will be utilized to help bring this time period in US history alive. Understanding civilizations during each major time period will be discussed as well as the human condition under which people functioned. Causes and effects of major events and eras will be a focus. Prerequisite: ENG 101.

HIST 101 United States History II 3 credits: The history of the United States from Reconstruction of the Civil War to the Viet Nam War will be covered in this course. The usage of filmed documentaries, full length movies, historical readings, first-hand accounts, music and primary sources will be utilized to help bring this time period in US history to life. Understanding the mind set of civilizations during each major time period will be discussed. Causes and effects of major events and eras will be a focus. Prerequisite: ENG 101and HIST 100.

HIST 110 World History I (3500 B.C. to 1600 A.D.) 3 credits: The history of the world focusing on four major civilizations: Chinese, Middle Eastern, European and Indian will be studied. Major events, eras and significant persons

and their impact on events will be emphasized. The effects of religion, economics, governments and politics will be discussed. Prerequisites: ENG 101 and ENG 102.

HIST 111 World History II (1600 A.D. to the present) 3 credits: The history of the world focusing on major civilizations, events, eras and significant persons and their impact on events will be studied. The effects of religion, economics, governments and politics will be discussed. Prerequisites: ENG 101 and ENG 102.

HIST 120 Arizona History 3 credits: The history of Arizona from early Native American tribes, such as the Anasazi to present day. Arizona Government and its constitution will be a part of this course. Arizona territorial days, mining and the wild west, cattle, copper, citrus and cotton, will be studied. Famous Arizona historical figures, statehood, events, and places will be included. Prerequisites: ENG 101 & ENG 102.

HIST 150 History & Preservation of America's National Parks 3 credits: A history of our National Parks and their founding. A survey of National Monuments, Seashores, Parks and Historical Parks will be studied. Benefits, and maintenance of these areas will be discussed in terms of our human existence and the preservation of these vary diverse places. Some field trips will be required. Prerequisite: none

HIST 210 Ancient Civilizations I 3 credits: (Option to take in Italy) A survey of the Ancient Civilizations of the Roman Empire through field studies to major ancient ruins in Italy. Prerequisites: none (Option to take in Italy must be taken concurrently with ART 210 and Ital 100- a 2-week expedition.)

HIST 211 Ancient Civilizations II 3 credits: (Option to take in Greece) A survey of the Ancient Greek Civilization through field studies to major ancient ruins in Greece. Prerequisites: none (Option to take in Greece with HIST 330 Ancient Architecture and HUM 314 Mediterranean Cultures-a 2-week expedition.) When available.

HIST 300 AZ & US Constitutions for Teachers 3 credits: A survey of the United States & Arizona's Constitution, laws and government. The roles of the United States three branches of Government will be studied: Legislative, Judicial and Executive. The US Constitution and its Amendments will be examined as well as laws pertaining to Education. Prerequisites: none

HIST 330 Arizona & US Constitution & Government 3 credits: A survey of Arizona's Constitution, laws and state government. The United States Constitution & Government and its three branches will be studied: Legislative, Judicial and Executive. The US Constitution and its Amendments will be examined as well as laws pertaining to Education. Prerequisites: none

HIST 310 The World Wars I and II 3 credits: A study of World War I and World War II. A focus on Hitlers quest for world domination and the annihilation of the jews through the Holocaust will be fully explored. This course may be taken in conjunction with an expedition to Germany when available. Prerequisites: HIST 111

HIST 330 Ancient Architecture I 3 credits (With Greece Field Study Lab 4 credits: The history of ancient architecture focusing on Greek and Roman styles. Its use in modern architecture today and its structural influence in modern architecture. Prerequisites: None (This course may be taken in Greece with HIST 210 and HUM 314.)

HIST 400 Colonization of America 3 credits: A comprehensive study of the early explorers and colonizers of America. Expeditions to colonial America including Jamestown or Plimoth Plantation & Salem (when available). Prerequisites: None

HIST 410 US Civil War and Reconstruction 3 credits: An in-depth study of the events leading up to the US Civil War, and reconstruction. A large focus of this course will be on slavery and the role it played in the Civil War and the US economy of that time period. (An expedition to several Civil War sites may be included in this course when available Sites include Gettysburg and more) Prerequisites: HIST 100

HIST 490 Senior Field Research Project 4 credits (Option to complete in a Historical Venue-Must be pre-approved): A capstone course for students majoring in History. Seniors will complete an approved research project in the

field of History utilizing internship experiences, field research and library studies. The project will be completed in written format and is required to graduate. Prerequisites: All Core course requirements.

HUM 310 Central American Cultures 3 credits: (Field Study in Costa Rica or Belize only) This course will introduce students to underdeveloped countries, their cultures and efforts to become more developed in a world economy. Cultural aspects of each country and its people will be experienced and explored through their economy, cultural heritage, their arts and history. Prerequisites: none (This course must be taken concurrently with SPAN 200 and EDU 480.)

HUM 312 African Cultures 3 credits: (Field Study in Africa only) This course will introduce students to underdeveloped countries, their cultures and efforts to become more developed in a world economy. Cultural aspects of each country and its people will be experienced and explored through their economy, cultural heritage, their zoological significance, their arts and history. Prerequisites: none (This course must be taken concurrently Art 312, and BIO.)

HUM 314 Mediterranean Cultures 3 credits (Field Study in Greece only) This course will introduce students to ancient cities mixed with modern day technology and small farming communities in Greece. It will focus on the Greek culture which transcends much of the Mediterranean. Cultural aspects of each region of Greece and its people will be experienced and explored through their economy, cultural heritage, their arts, food and history. Prerequisites: None (This course must be taken concurrently with Hist 210 and HIST330.)

HUM 316 Cultures of Italy (Must be taken in Italy) 3 credits: This course will take students on a journey through Italy experiencing ancient and old cities and cultures as well as modern day Italy. The people, religions, foods and architecture along with art and history will be studied. Prerequisites: None

ITAL 200 Conversational Italian 3 credits: (Field Study in Italy only) Students will venture to Italy for several field study courses while learning Italian in a conversational manner. Students will converse with the locals to carry out every day activities and processes. Specific reading, writing and speaking activities will be required. Prerequisites: none (This course must be taken concurrently with HUM 310 and EDU 480.)

MAT 090 Math Fundamentals 3 credits: This course is designed as a remedial course for entering college students who did not pass USE's entrance requirements for Math. This course will cover: functions, graphs, polynomials, equations and expressions. This is a remedial math course which does not count towards graduation, but must be taken and passed with a C or better to move to a higher level math course. Prerequisites: none

MAT 110 Math for Teachers 3 credits: This course is intended for students majoring in: Early Childhood, Elementary Education, Secondary Education (field outside of mathematics, sciences and business). Math learned will prepare students to pass the entrance requirements to the College of Education. Prerequisites: Pass 090 with a C or higher or pass CSE's entrance requirements.

MAT 120 College Algebra 3 credits: This course will develop skills in algebra. Topics include: systems of equations and matrices, introductions to exponential and logarithmic functions, and linear and polynomial equations. Students will be prepared to take higher level math courses upon successful completion of College Algebra. (This course is not intended to prepare for Calculus.) Prerequisites: Pass USE's entrance requirements for Math or complete MATH 095 with a C or better.

MAT 200 Pre-Calculus 4 credits: This course is meant to bridge the static concepts of algebra, geometry and calculus. Topics include: graphs, inequalities, basic concepts and theories in algebraic, exponential, trigonometric, and logarithmic functions and functional inverses. Students will be able to apply theories of rational, polynomial, exponential, trigonometric and logarithmic functions at the successful completion of this course. This is a preparation course for MATH 250 Calculus I. Prerequisites: MATH 120.

MAT 201 Statistics & Lab 4 credits: This course introduces statistical methodology to apply to the utilization of research. Focus will include: comprehension, interpretation and uses of inferential statistical concepts. These concepts include: random sampling and statistical inferencing, experimental design, analysis of variance, estimation and testing hypotheses of means and variances, descriptive statistics, parametric and non-parametric tests, Chi-square, central limit

theorem and correlation and regression analysis. Lab time will utilize statistical data gathered from activities, these will be utilized to interpret results and be able to use the statistics to explain a representation of a hypotheses. Prerequisites: Math 200 & Lab.

MAT 240 Modern Geometry 3 credits: This course explores the structures of both Euclidean and non-Euclidean geometries by comparing and contrasting various axioms of each. A focus will be on advanced topics in geometry, methods of proof, and background history in geometry. Students will be able to investigate geometric constructions with dynamic software and present logical axiomatic arguments. Prerequisites: A grade of C or better in Math 250.

MAT 245 Trigonometry 3 credits: Trigonometric identities will be developed and demonstrated including multiple angle identities and identities developed from them. Trig functions of any real number will be evaluated and the functions graphed with their transformations. The definitions of fundamental trig functions using right angle triangle and unit circle approaches will be a part of plane trigonometry. Inverse trigonometric functions will be developed and used to solve trigonometric equations. Trigonometric applications will be solved using right angle trigonometry and the laws of sines and cosines. Trigonometric methods will be applied to the use of 2D vectors and vector dot products and complex numbers. Prerequisites: MAT240

MAT 250 Calculus I 4 credits: This course is designed for mathematic, engineering and science majors. It covers: differentiation and integration, numerical and theoretical concepts of limits, the intuitive, and continuity. The study of curve sketching, extrema, and applications involving algebraic, exponential, logarithmic and trigonometric functions are included. Prerequisites: MAT245

MAT 260 Calculus II 4 credits: A continuation of the concepts covered in Calculus I. Also includes improper integrals, numerical integration, integration techniques, differential equations, sequences, series and applications. Prerequisites: Passing grade in Calculus I- MAT250

MAT 310 Discreet Math 4 credits: An introduction to algorithms, graph theory, proofs, logic, recurrence relations and trees with a variety of applications. Prerequisite: MAT250

MKT 200 Introduction to Marketing 4 credits: A basic course in marketing of a business or a product or service. Different techniques of marketing will be studied and created. The use of technology and print will be emphasized. Developing a "Brand" will be explored. Historical and present-day forms of advertising will be studied and success rates will be compared. Prerequisites: None

MUSC 100 Music Through the Ages 3 credits: Music through the ages from Indigenous people to modern day will be explored. Students will analyze and critique musical pieces. Famous musical works as well as types of music will be utilized. From Bach to the Beatles, students will learn about how music has developed and its effects on communities and the people of the world. Prerequisites: none

PHIL 100 Philosophy I 3 credits: Students will be introduced to the basics of Philosophy, including histories of famous philosophers and their theories, as well as modern day philosophers. Discussions of the meaning of life, human purpose, right from wrong, and the role of a person's own philosophy and its relationship to their religious beliefs will be discussed both verbally and in essay format. Prerequisites: Eng 101.

PHYS 101 General Physics I & Lab 4 credits: A general study of Physics de-emphasizing calculus includes: mechanics, properties of matter, energy and momentum, elasticity, rotation, fluids, vibration, temperature and expansion, wave motion and sound, thermal behavior of gases, dynamics and statics, kinematics, and heat transfer. Labs will reinforce these principles through practical application. Prerequisites: MAT 200.

PHYS 102 General Physics II & Lab 4 credits: A second semester of general physics de-emphasizing calculus. Concepts include: applied electricity, electromagnetism, electric charge, fields and circuits, geometrical optics, applied optics, wave optics, atoms and nuclei, electrons and photons. Labs will apply these concepts in practical applications and demonstrations. Prerequisites: MAT 200, PHYS 101 & Lab.

PHYS 201 Astronomy & Lab 4 credits: The study of Astronomy includes: planetary systems, stars, galaxies, meteors, constellations, black holes and the importance of understanding the relationship between astronomical elements and our Earth. Evolution of stars and planets will be discussed as well as many common theories involving Astronomy. Several night sessions will be scheduled to view the skies at night through telescopes. Prerequisites: Eng 101 & Eng 102.

PSYCH 100 Psychology 3 credits: This course will include the concepts, significant findings, theories, terminology and methodologies that apply to the field of Psychology. Prerequisites: Eng 101.

PSYCH 310 Survey of Early Childhood Developmental and Educational Psychology & Lab 4 credits: Basic theory and research on psychological development from Prenatal to adolescence. An emphasis will be placed on Birth to age 8 and the appropriateness of curriculum, materials and learning environments for proper brain development and social and emotional wellbeing. Observations will be included. Prerequisites: ENG 101

PSYCH 311 Survey of Child & Adolescent Developmental Psychology & Lab 4 credits: Basic theory and research on psychological development from Prenatal to adolescence. Nature vs Nurture will be explored observations will be included. Prerequisites: ENG 101

REL 100 Christian Living 3 credits: The basics of the Christian faith, its traditions and practices and the challenges of Christian Living in the world today. Discussions of “living” every day as a Christian, through example and practice will be a focus. The major importance of a Christian to “live” their faith in work, with family, through prayer and with Jesus will be studied. Examples from history will be utilized. Prerequisite: none

REL 200 Religions of the World 3 credits: An introduction to the histories, and basic practices and beliefs of major religions in the modern world: Judaism, Christianity, Islam, Buddhism, and Hinduism. BY studying these religions and their differences, students will be better able to understand these religions and be able to interact with people in our pluralistic world, while maintaining their Christian faith. Prerequisites: none

REL 300 Christian Stewardship (Practicum) 3 credits: An internship practicum rooted in serving communities, both local and internationally. Projects require community service time working within needy populations, families and agencies to spread the Christian faith through giving of your time to do God’s work. Organizational skills to complete tasks will be stressed. Prerequisites: none

REL 400 History of Christianity 3 credits: A history of Christianity from its beginning to modern day. A focus will be on the earlier days leading up to the birth of Christ, his crucifixion, resurrection and the crusades. Prerequisites: None

SOC 100 Sociology I 3 credits: This course is introduced as a social science and its analysis in American society. The principles of sociology and many topics to be discussed will include: population, culture, socialization, deviance, urbanization, bureaucracy, the family unit, social stratification, minorities, and technology. Prerequisites: ENG 101 & ENG 102.

SPAN 200 Conversational Spanish 3 credits: (Field Study in Costa Rica only) Students will venture to Costa Rica for several field study courses while learning Spanish in a conversational manner. Students will converse with the locals to carry out every day activities and processes. Specific reading, writing and speaking activities will be required. Prerequisites: none (This course must be taken concurrently with HUM 310 and EDU 480.)

SPED 404 Survey of Disabilities: Mild to Moderate & Lab 4 credits: Students will survey the special education process including the laws and regulations. An introduction to the educational needs of children with mild to moderate disabilities and their families, with emphases on characteristics, prevalence, causes, definitions and educational approaches to these disorders and disabilities will be discussed. Students will learn to identify linguistic, cognitive, social and emotional patterns of learning and development for students with mild to moderate disabilities. Classroom observations will be included. Prerequisites: SPED 402

THEA 100 History of Theater 3 credits: The history of theater and Drama from Shakespeare to modern day theater will be studied. Types of theater will include: theater in the round, musicals, road shows, mime, theater through film, live stage

plays, etc. Famous theatrical performances, shows and performers will be studied, discussed and critiqued. Students will be required to attend some live theater performances during this course. Prerequisites: none

Graduate Courses

ART 510 The Great Fine Arts Masters I Advanced Studies (International travel required-2 weeks in Italy.) 4 credits: An in-person study of the greatest artists in history mixed with Music of the Italian Masters, including Opera. Visits to see the works of: Michelangelo, Da Vinci, Raphael, Rembrandt, and Botticelli to name a few will be studied in Italy. This in-depth excursion will immerse you into great works of Art and Music firsthand. The hidden meanings, motivations and long reaching effects of these great artists and musicians will be discussed. Prerequisites: none

BIO 500 Methods of Research 3 credits: This class will focus on research techniques in the field, the lab and through previous information published on your topic of study. Methods of data collection through research texts and field studies will be explained and practiced. Data presentation and paper writing will be included. Prerequisites: BS degree

BIO 501 Advanced Marine Biology & Lab 4 credits: Advanced study of marine taxonomy, marine environments, their flora and fauna and their diverse ecosystems in both freshwater and saltwater systems. Extensive work in the ZooQuarium and field studies will be required. Prerequisites: Undergrad Biology completion.

BIO 502 Aquaculture I- Marine & Lab:4 credits (saltwater) Students will experience working with saltwater aquariums and aquacultures in Lab. They will learn the biological principles and challenges to maintaining sound fish environments. Fish, shellfish, echinoderms, sponges, corals and larger sea life will be managed as well as water chemistry and species sustainability within these aquascapes. Planning and developing healthy aquacultures with compatibility species will be included in this class. Breeding of some species will be explored. Prerequisites: BIO 500

BIO 503 Aquaculture II: Freshwater & Lab: 4 credits Students will experience working with freshwater aquariums and aquacultures in Lab. They will learn the biological principles and challenges to maintaining sound fish environments. Fish, turtles, frogs and other freshwater animals will be managed as well as water chemistry and species sustainability within these aquascapes. Planning and developing healthy aquacultures with compatibility species will be included in this class. Breeding of some species will be explored. Prerequisites: BIO 501

BIO 504 Plant Communities of AZ Deserts & Lab 4 credits: Field Studies will explore the various Desert plant communities of the AZ Sonoran Desert. The relationships between these plants and desert wildlife and weather will be examined. Prerequisites: none

BIO 505 Fundamentals of Seed Biology & Lab 4 credits: Students will gather and analyze pertinent seed biology literature, types of seed: heritage vs GMO and discuss the benefits and drawbacks of each type. Seed structure, storage, and regrowth will be investigated. Students will create a seed growth project, approved by their professor and completed in the greenhouse on campus and present their findings at the end of the term. Prerequisites: none

BIO 506 Propagation of Horticultural Crops & Trees & Lab 4 credits: Students will learn the theoretical and practical applications of macro- and micropropagation techniques for higher plants through actual propagation in our greenhouses and labs. Field trips to local greenhouses and nurseries will be utilized. Prerequisites: none

BIO 507 Advanced Animal Nutrition for Farm Animals & Lab 4 credits: The nutrients required by animals, their functions, interrelationships, and processes of utilization; feedstuff composition and their use in diet and ration formulation is the focus of this course. Hands-on lab work in the CSE's Animal Science Barn will be a large part of this course to better understand not only nutrition of domesticated animals, but observations of animal health in relation to their nutrition and feeding. Field trips to local feed stores will be required. Prerequisites:

BIO 508 Remote Sensing Applications (GIS) & Lab 4 credits: This course covers how to interpret and analyze images of the Earth collected using a number of different satellite and aerial platforms, especially in aspects relating to the environment. Environmental applications in conjunction with forest conservation for remote sensing include habitat mapping, land use and land use change monitoring, weather monitoring, and other biophysical measurements. Topics covered in this class include an overview of the applications for remotely sensed imagery, basic physics of the detected energy, image processing, image interpretation, and familiarity with the more useful current remote sensing platforms in terms of forestry, fire detection and forestry interventions. Prerequisites:

BIO 509 Greenhouses & Management of Nursery Operations & Lab 4 credits: Students will learn the main principles involved in operating & managing nurseries. Plants, nutrition, pest control, labor management, irrigation & watering systems will be the bulk of this course. Work in our greenhouse and nurseries, plus some field trips will be required. Prerequisites: none

BIO 510 Science and Natural History Media/Museum Production & Lab 4 credits: Students will be engaged in examining museum exhibits, their preparation, interactivity, age appropriateness, eye appeal, scientific content, signage and practical construction. Some exhibits will feature live animals which will involve life support systems and habitats appropriate for each different species survival. Students will intern with museum curators and designers and assist in building exhibits in our Zooquarium. At the conclusion of the course, students will design a museum exhibit or habitat, make a model of it and turn in for a grade. Some field trips will be required. Prerequisites: none

BIO 511 Native Trees and Plants of AZ & Lab 4 credits: Field Studies of Arizona's very diverse plant taxa will be a large part of this course. Field trips in various parts of the state will be required. Uses of these plants and trees as well as habitats for wildlife will be discussed. Prerequisites: none

BIO 520 Fisheries Science I & Lab (May be taken locally, or abroad in Belize or Costa Rica) 4 credits: Fish Biology, ecology and habitats relevant to fisheries and fish management on a global and regional scale will be studied. Both freshwater and saltwater fisheries will be explored with the current laws and conservation management in place, research on the fishing effects of the ecosystems involved and new designs utilizing artificial reefs, aquaculture, etc. Prerequisites: BIO 501

BIO 522 Sea Turtles II & Lab (Costa Rica) 4 credits: Students will study the biology of sea turtles. They will participate in the nesting and hatching of the Olive Ridley Sea Turtles in Costa Rica. Students will get an up-close, hands-on learning experience with mother sea turtles nesting, as well as working with hatchlings on the beach. Investigations into the declining population of the leatherback sea turtle will be explored as well as current issues in sea turtle biology and their conservation and management. Local laws to assist these endangered animals and local procedures will be examined and discussed with the local rangers. Prerequisites: BIO 500

BIO 523 Soil & Nutrient Management for Ag Production & Lab 4 credits: Hands-on work with soils-related properties, nutrients and processes. Soil science relating to the physical, chemical and biological properties and its relation to native and agricultural plant growth. Uses of natural soil nutrients and chemical fertilizers, their effects on the soil and plant production and the environment. Prerequisites: none

BIO 524 Sustainable Agriculture & Land Management (Costa Rica option) Studying agricultural and urban land management strategies, and the science and policies utilized in the US and abroad. Students will discuss and evaluate the impacts of specific types of agriculture, new research in sustainable crops and farming methodologies and the environmental impacts of those systems on humans, their economy and living standards. Prerequisites:

BIO 525 Paleobotany & Lab 4 credits: Fossils will be examined to do a comparative study of plants through geologic time with attention to morphology and evolution of major groups of land plants. Prerequisites: none

BIO 527 Breeding of Plants & Crops & Lab 4 credits: The science and technology of plant improvement through breeding techniques. Lab studies in CSE's greenhouses and farms & orchards will be required as well as field expeditions to local farms. Prerequisites: None

BIO 543 Tropical Fruit & Coffee Bean Production and Research & Lab (Costa Rica): A survey of tropical fruit and coffee bean production and the research involved with diseases, pest management and organic farming in Costa Rica will be the focus of this course. Students will take field expeditions to coffee, banana, pineapple, and sugar cane plantations in Costa Rica, as well as interact with farm managers and coffee processing plants. The challenges and success of these agricultural products will be examined. Costa Rica's wide variety of fruits and other crops will also be studied. Prerequisites: none

BIO 544 Fruit & Nut Production in AZ & Lab 4 credits: A survey of fruit & nut products grown in Arizona will be the focus of this course. Field expedition studies in Arizona will be required to give students a perspective of the challenges and successes with the fruit and nut production in our state. Organic farming versus uses of chemical fertilization practices will be explored as well as diseases, weather, pest management and overall land management of these types of farming. Natural pest and disease deterrents will be discussed. Work in our USE orchards will also be required. Prerequisites: BIO 501

BIO 545 AZ Game & Fish Management & Lab 4 credits: This course entails understanding Arizona Game and Fish Laws and regulations regarding all forms of hunting and fishing. It also investigates the work that Game and Fish are involved in with wildlife management, fishery science and the management of Arizona's wildlife. Students will work with Game & Fish in various parts of AZ and grasp the major components of the biological processes involved. Human impact on AZ Game and Fish will also be discussed. Prerequisites: none

BIO 546 Wildlife Tracks and Signs & Lab-Field Study 4 credits: Students will gain a deeper understanding of the behavior of terrestrial animals in terms of their habitats, what and where they feed, den and bedding locations, and other activities. Understanding the importance of biological corridors will be enhanced with field work, conducting animal surveys, observations, and tracking wildlife. Field studies at our Alpine, AZ Biological Research Station will be required. Prerequisites: BIO 645 must be taken concurrently.

BIO 547 Agribusiness Financial Management and Legalities & Lab 4 credits: The major components of the Agribusiness: finances, legalities, Food & Safety regulations, and state and county Environmental Health laws will be studied. Prerequisites: none

BIO 548 Biology & Identification of Urban Pests & Lab 4 credits: The biology, behavior, and identification of a variety of urban pests will be examined. Damage recognition of species that infest houses, damage structures, and affect pets and humans will be the focus of this course. Field studies will be required. Prerequisites: none

BIO 549 Environmental Education Program Development & Internship 4 credits: Students will intern in CSE's Lab School ZooQuarium Program to learn how to create environmental education programs for youth. They will get a firsthand experience in true "Discovery Education" and then create a hands-on project to be carried out either inside or outdoors. Prerequisites: none

BIO 550 International Ocean Law & Governance & Lab 4 credits: This course provides students with the information necessary to understand the complexity of the international legal structure and be able to identify the organizations tasked with developing and enforcing international Ocean laws. Students will gain skills necessary to identify the ethical and cultural concerns complicating solutions to conservation issues relating to laws governing our worlds oceans. Prerequisites: BIO 501

BIO 551 Insect Taxonomy & Lab 4 credits: (Costa Rica Option) Classification of adult insects to family and of some to species level. Habitat, niche, and relationship to environment will be studied in our labs and in field studies. An option to take this course in the rainforests of Costa Rica is an option. Prerequisites: none

BIO 552 Introduction to US Wildlife Law, Policy & Ethics & Lab 4 credits: This course will provide a thorough understanding of the U.S. legal system governing fish and wildlife conservation as it relates to wildlife management and will help students to analyze the complex stakeholder motivations affecting U.S. wildlife conservation policies from multiple perspectives. Prerequisites: BIO 575

BIO 555 Freshwater Ecology & Lab 4 credits: The ecology of freshwater streams, ponds, rivers and lakes and their biotic communities dependent on them, their interactions, importance in the ecosystems of the region and human usage will be a focus of this course. Environmental impacts and ecological processes that affect these freshwater systems and the living organisms within them will be researched. The concepts in freshwater ecology that are important for controlling the traits, distribution, and abundance of aquatic organisms and major groups of organisms found in freshwater habitats, the physical and chemical properties that are important for structuring freshwater communities will be studied. Lab studies in CSE's freshwater aquariums and ponds will be utilized as well as field studies throughout Arizona. Prerequisites: Under grad Biology

BIO 556 Limnology I & Lab 4 credits: Chemical, Biological, and physical dynamics of inland waters. Their effects on ecosystems, wildlife and conservation. Field studies will be included. Prerequisites: none

BIO 560 Physiology, Endocrinology and Reproduction of Farm Animals & Lab 4 credits: Principles of reproduction in avian and mammalian farm animals including factors related to the estrous cycle, semen-production, artificial insemination, pregnancy, lactation, pregnancy diagnosis, and environmental factors affecting reproduction are the focus of this course. Lab work in CSE's Animal Science Barn with a variety of both mammals and bird species will be required. Prerequisites: BIO 612

BIO 561 Livestock Health and Disease Prevention & Lab 4 credits: A survey of diseases of livestock and methods to prevent and control these diseases will be researched and studied. Lab work in CSE's Animal Science Barn and field studies to nearby farms will be required. Prerequisites: BIO 560

BIO 562 Forestry Sustainability & Lab 4 credits: Management of forests and their sustainability in terms of deforestation, wildlife management, and fire management both regionally and globally, will be the focus of this course. Arizona forests will be studied in conjunction with the Arizona Forest Service interactions through field studies. Students will learn methodologies and techniques of present-day forest management in comparison to historical trends from the past. Areas of forest fire devastation will be explored in the field and reforestation in those areas will be studied. Rainforests of the world and the reforestation efforts presently being implemented will be explored, as well as the continual deforestation of other crucial rainforests globally. Prerequisites:

BIO 566 Sustainable Designs & Lab(Costa Rica Only) 4 credits: This course will be taken in Costa Rica. It explores how Costa Rica has become an icon of successful sustainability through their Ecotourism efforts to both save the rainforest environments and benefit from this conservation effort by boosting the economy with Ecotourism of the areas which were being conserved. This ideology of sustainable design by interfacing aspects of environmental, economic, and sociological perspectives is exemplified in Costa Rica's model. Students will examine the interrelationships of three foundational components of Sustainable Design; Environmental Sustainability – ecosystem integrity, carrying capacity, biodiversity; Economic Sustainability – growth, development, productivity; Social Sustainability – cultural identity, stability, and equity. Prerequisites:

BIO 574 Genetic Analysis of Livestock Traits & Lab 4 credits: A comprehensive examination of principles of livestock inheritance, QTL mapping methodologies, and functional genomic approaches used for genomic selection and improvement programs in farm animals. Lab work in CSE's Animal Science Barn working with our different breeds of farm animals will provide hands opportunities with breeding and genetics. Prerequisites: BIO 612

BIO 575 Advanced Conservation Biology & Lab 4 credits: Students will study the application of biological and resource management theory to the problems connected with the conservation of natural communities. Ongoing issues associated with conservation will be discussed. Prerequisites: none

BIO 576 Wildlife Biodiversity & Lab 4 credits: (Costa Rica Option) This course will focus on the biodiversity of wildlife on earth. Field studies will be carried out in a variety of areas in Arizona and the US. An option to take this course in the highly biodiverse country of Costa Rica is available. Biotic communities of wildlife and their inter-relationships, habitats, conservation and interactions within ecosystems will be explored. Prerequisites: BIO 652-May be taken concurrently with BIO 576

BIO 577 Insects & Wildlife & Lab 4 credits: A study of the relationships of insects and other arthropods with wild vertebrate animals. Field Studies and Labs in CSE's ZooQuarium will be part of this course. Prerequisites: BIO 501

BIO 578 Apiculture I & Lab 4 credits: The biology of honey bees and the craft of apiculture will be examined by exploring the life cycle of honey bees, biogeography and evolution of beekeeping. Students will work directly with CSE's beehives and learn the types of equipment, techniques, management practices, pollination ecology, economic practices and current issues within beekeeping. Prerequisites:

BIO 579 Apiculture II & Lab 4 credits: This advanced course I focuses on different types of hives, styles of beekeeping, colony stressors and annual hive management. Issues affecting the beekeeping industry will be explored. These include: integrated pest management, pests/diseases, African bees, queen production, bee removals, commercial pollination and pesticides. Honey production and collection techniques as well as grading honey will be experienced with hands on beehive work with CSE's beehives. Prerequisites: BIO 578

BIO 580 Biology of the Honey Bee & Lab 4 credits: Students will study the extraordinary world of honey bee biology. Topics include: biogeography, behavior, anatomy, physiology, reproduction, nutrition, genetics, honey bee sociality, and taxonomy. These topics will be discussed via the paradigm of the honey bee superorganism. Lab work with CSE's Honey Beehives will be required. Prerequisites: BIO578

BIO 590 Fire Paradigms and Management & Lab 4 credits: Students will work with state Forestry Services & Fire Management agencies to understand forest fires, and how they are working to manage and prevent them. Students will review dominant fire paradigms worldwide, its theoretical basis, and social/ecological/management implications. In-depth studies of the Yellowstone Fires and AZ fires in past history will be discussed. Current changes in forest management in respect to fire paradigms will be a focus. Field studies at our Alpine, AZ Biological Research Station will be required. Prerequisites:

BIO 600 Advanced Rainforest Ecosystems and Zoology & Lab 4 credits: (Costa Rica) This is an advanced immersive comprehensive study of the fundamental biological principles as expressed in the activities and structure of animals of the rainforest. Students will identify different animal species according to Phyla and Class as they apply taxonomic relationships between animals and their ecosystems. Anatomical features, and specializations related to nutrition, excretion, reproduction, respiration, locomotion and sensory perception of animals will be explored. Major groups of animals of the rainforest will be surveyed with attention to ecology, morphology, physiology, evolution and reproduction. Day and night hikes into the primary rainforests present students with real life animal observations and encounters which students will document through field study research techniques and place into data driven research formats. Rainforest habitats are investigated and the many interactions of differing species are seen firsthand. Prerequisites: Undergrad BIO.

BIO 601 Advanced Coral Reef Ecology & Research (Belize field study-snorkeling required) 4 credits: Extensive studies of coral reefs, their impact on coastal areas and the ocean and the necessity to protect them will be investigated.

Snorkeling in the Hol Chan Marine Reserve and neighboring islands will provide students the opportunity to experience one of the most biodiverse marine regions in the world. Students will examine coral reef systems, their ecology, coral bleaching, life cycles of corals, identification of coral species, and the impacts of storms, humans, invasive species and history. The overall importance of coral reef ecosystems to ocean life and future marine species will be explored. Fish and marine animal taxonomy will be part of this course as well. Prerequisites: BIO 501

BIO 602 Research Diving Techniques (Scuba Certification Required to be taken during this course) 4 credits: (Belize) Students will learn to snorkel and scuba dive on site in Belize on the 2nd largest great barrier reef in the world, with visibility up to 100 feet. Through PADI requirements and training, students will end the course being certified in SCUBA Open-water Diving. Utilization of diving techniques in different types of areas to be able to perform research and collect data while snorkeling and diving will be utilized during this course. Prerequisites: BIO 500

BIO 604 Advanced Plant Anatomy (Costa Rica Option) 4 credits: Advanced studies in plant anatomy will be through field studies, work in our greenhouses and our Zooquarium. The origin, structure, and function of principal cells, tissues, and vegetative and reproductive organs of seed plants will be included in lab and classroom work. Prerequisites: none

BIO 610 Tropical Botany (Costa Rica) Required: 4 credits A study of tropical plants utilizing the diverse habitats of Costa Rica, from the cloud forests to the coastal rainforests, students will engage in field studies of extensive botanical species. Their uses, physiology, morphology, anatomy, ecology, and systematics will be explored. Prerequisites: none

BIO 611 Mangrove & Reef Ecosystems (Belize field study -snorkeling required) 4 credits: Students will engage in exploring the mangrove ecosystems and their connections to reef ecosystems. Snorkeling both these areas in Belize will provide an in-depth look at the critical importance of these coastal ecosystems to marine habitats, coastal preservation and reef ecology. Prerequisite BIO 501

BIO 612 Tropical Forestry & Lab 4 credits: (Costa Rica) A survey of the tropical rainforests and cloud forests of Costa Rica. Students will complete taxonomy of the tropical forests, trees and plants as well as study the different types of tropical forestry and the symbiotic relationships of many of these trees and plants and their ecosystems. Students will complete field studies of: grasses, epiphytes, flowers, palms, and hardwoods to name a few, of the 330 species of trees and 9-10,000 types of vascular plants in Costa Rica's tropical forests. Environmental impacts on these tropical forests will be explored. Prerequisites: none

BIO 615 Growth and Development of Domestic Animals & Lab 4 Credits: An integration of the, genetic, physiological and nutritional bases of animal growth, development, and body composition with application to livestock production, including avian and mammalian species. Lab work in CSE's Animal Sciences Barn and some local field studies will be utilized. Prerequisites:

BIO 620 Tropical Entomology & Lab (Costa Rica) 4 credits: This course covers the natural history, ecology, behavior, natural ecosystems, and agroecosystems of the tropics. Students will study a wide variety of insects in the tropical rainforests of Costa Rica. Specimen collection will be a part of this class and preservation techniques of these collected insects will be utilized. Prerequisites:

BIO 621 Coral Reef Conservation & Management (Belize field study -snorkeling required) 4 credits: Students will snorkel and dive in different areas of the Belize Barrier Reef Reserve System, a UNESCO Heritage site. The oldest protected area, Hol Chan Marine Reserve will be investigated as students learn how to collect data for ongoing research projects with the local conservation agencies. They will see firsthand how a successful well-operated marine reserve benefits both the environment and the economy alike. Prerequisites: BIO 501

BIO 622 Tropical Herpetology I & Lab 4 credits: (Costa Rica Rainforest) An advanced in-depth study of tropical amphibians and reptiles will review the evolutionary history, phylogenetic relationships, global

diversity, life history, and general biology of these groups. Immersed in the cloud forests and primary rainforests of Costa Rica students will survey these animals daily. Taxa and population studies will be included as students collect data during their field studies. Prerequisites: Biology undergrad completion

BIO 623 Biodiversity of Butterflies& Moths (Costa Rica) 4 credits: Students will study the Biodiversity of butterflies in Costa Rica which boasts of over 1200 species of butterflies and 12,000 moths. Field studies into different regions of this extremely biodiverse country, including primary rainforests will provide opportunities for numerous hands-on experiences with butterflies and moths. Butterfly and moth anatomy, life cycles, color variations, habitats and relationships to the ecology of these areas will be studied. Taxa of butterflies and moths will be a part of this course. Prerequisites: BIO 620-Can be taken concurrently on same expedition.

BIO 624 Tropical Ecology & Lab (Costa Rica) 4 credits: A global perspective of tropical environments, history, biological communities, and their structure and function. Students will be immersed in the tropical primary rainforests of Costa Rica where they will investigate the ecological issues in the tropics and get a firsthand look at how a country has turned ecological conservation into a thriving economy and a sustainable system for the environment and its people. Prerequisites: none

BIO 625 Rainforest Mammalogy & Lab 4 credits: (Costa Rica Rainforest) The biological study of rainforest mammals of the world. Their structure, behavior, taxonomic relationship and life histories will be a focus as students carry out field studies in the cloud forests and primary rainforests of Costa Rica, as well as work in the CSE Zooquarium . Students will investigate the mammal diversification of the rainforest and the ecology of local mammalian fauna. Identification of mammals by physical characteristics, habitats, verbalizations and patterns in habitation will be explored. Monkeys (four types), big cats (jaguars, ocelots, and cougars), peccaries, anteaters, sloths, agoutis, to name a few are prevalent in the Piedras Blancas Reservacion and the Golfito Reserve, where two of our Biological stations are located. Prerequisites:

BIO 628 Livestock Food Production and Management & Lab 4 credits: Principles of modern Beef, Pork, Lamb, Goat, Milk and Poultry production will be studied. All aspects of management of livestock will include: housing, feeding, handling, breeding, transporting, grading, veterinary requirements, and the health and safety of livestock will be experienced firsthand at CSE's Animal Science Barn. Cattle, Swine, poultry, sheep and goats will be included. Prerequisites: BIO 560 or BIO 612

BIO 630 Advanced Ornithology I-Birds of North America & Lab 4 credits: (AZ & US) The advanced scientific study of bird species in North America and birds in Arizona. Some field studies will incorporate birds of prey, nesting, and migratory birds. Students will learn to identify bird species by groupings, characteristics, songs/sounds and habitats. Bird anatomy, bird groups, environmental interactions and their habitats in the wild will be studied. Research techniques for collecting data in the field will be utilized. Prerequisites: BIIO 201 & Lab and Bio 202 & Lab, BIO 301 & Lab, and BIO 401 & Lab.

BIO 631 Advanced Ornithology II -Tropical Birds & Lab 4 credits: (Costa Rica Rainforest) The advanced scientific study of tropical birds of the world, focusing on the wide variety of species in Costa Rica. Field studies will incorporate surveying exotic species such as the scarlet macaws and toucans. Students will learn to identify bird species by groupings, characteristics, songs/sounds and habitats. Bird anatomy, bird groups, environmental interactions and their habitats in the wild will be studied. Successful efforts being implemented to save tropical birds and be released back into the wild will be experienced firsthand, as our Piedras Blanca Biological Research Station is one of the sites where these birds and other animals are released back into the rainforest. Prerequisites: Bio undergrad.

BIO 632 Physiology of Forest Trees & Lab 4credits: Field studies into Arizona's northern pine forests at our Alpine Biological Research Station will provide opportunities for students to be immersed in coniferous and

deciduous trees. They will study the growth and development of woody perennial plants, with emphasis on understanding how environmental factors affect their physiology, including fires, regrowth and rejuvenation. Current trends in wood production and forest conservation will be discussed with local forest rangers and the AZ Forestry Service. Prerequisites: none

BIO 640 Ichthyology I Freshwater & Lab 4 credits: An advanced biological and ecological study of fishes, both cartilaginous and bony. Identification of species, anatomy, habitats, evolutionary histories, global diversity, phylogenetic relationships will be studied. Endangered species, conservation efforts and fishing issues and concerns will be discussed in relationship to the marine populations of fishes in fresh water habitats: rivers, streams, ponds and lakes. Labs will involve students with varied live aquatic habitats in CSE's ZooQuarium, aquaculture and field studies to local habitats. Prerequisites:

BIO 641 Ichthyology II Ocean(saltwater) & Lab 4 credits: (Belize option) An advanced biological and ecological study of fishes, both cartilaginous and bony. Identification of species, anatomy, habitats, evolutionary histories, global diversity, phylogenetic relationships will be studied. Endangered species, conservation efforts and fishing controversies will be discussed in relationship to the constantly changing marine populations of fishes in ocean and brackish water habitats. Labs will involve students with varied live aquatic habitats in CSE's ZooQuarium and field studies to local aquariums. An option to take this course in Belize is available. Prerequisites:

BIO 642 Insect Ecology & Lab 4 credits:(Costa Rica Option) An advanced course on concepts in ecology with emphasis in insects; relationships with their biotic and physical environments and basics of ecological research. Field studies and lab work will involve extensive insect collections at CSE's Biology Dept. An option to take this course in the rainforests of Costa Rica is an option. Prerequisites:

BIO 645 Habitats and Biological Corridors of AZ Wildlife & Lab 4 credits: Students will research, study and map out biological corridors of wildlife in Arizona. Elk, mountain lions, big horn sheep, wild turkeys, antelope, deer, black bear, wild donkeys, wild mustangs and the newly introduced Mexican grey wolves will be a focus of this course. The interrelationships of their habitats and migration patterns in connection to environmental impacts will be examined. Field studies at our Alpine, AZ Biological Research Station will be required. Prerequisites: BIO 546 must be taken concurrently.

BIO 649 Marine Conservation & Biology& Lab (May be taken locally or in Belize or Costa Rica) 4 credits: Marine conservation and management techniques will be studied both in the US and abroad. Freshwater systems (rivers, streams, lakes) and oceanic waters will be studied through our on-site labs in our ZooQuarium and field studies. The connections between marine conservation, global and local economies, tourism and environmental issues will be discussed. Prerequisites: BIO 501

BIO 650 Marine Conservation Outreach (Internship in Belize/or Costa Rica) 4 credits: Students will work with a local marine conservation agency in one of these countries. They will study, educate others and assist with current conservation research studies and management in the areas. Prerequisites: BIO 501

BIO 651 Advanced Plant Taxonomy (Costa Rica Option) 4 credits: An advanced taxonomic study of tropical plants in the rainforests, mountainous regions and cloud forests of Costa Rica will be through field studies in these regions. Extensive taxonomy of the many diverse plants, and trees will be the focus. Prerequisite: none

BIO 652 Wildlife Population Ecology & Lab 4 credits: (Costa Rica Option) Wildlife population studies will be carried out as part of this course in field studies in AZ and/or in Costa Rica (option available). These studies and research gleaned from them will become the basis for student discussion, projects and research into the ecology of these wildlife species

and their population increase or decline. The effects of these changes or stabilization of specific species populations and their impact on the environment will be examined. Background on population analysis covering population growth and regulation, life history theory, species interactions and population viability analysis are included. Prerequisites: BIO 576- May be taken concurrently with BIO 652.

BIO 653 Invasion Ecology & Lab 4 credits: Students will study the environmental effects of invasions of non-native species into existing habitats. A look at how these invaders came into this specific environment, the history behind it and steps being taken, if any, to curtail the negative effects on the environment will be discussed. Solutions to the eradication of the non-native species will be researched. Both animal and plant invasive species will be covered. Prerequisites: none

BIO 675 Hydrology I & Lab 4 credits: An in-depth study of the interactions between organisms, the hydrologic cycle and ecosystems. Field Studies will focus on hydrology in AZ. Prerequisites: none

BIO 676 Hydrology II: Impacts of Beavers & Lab 4 credits: This course on Hydrology - the study of interactions between organisms, ecosystems, and the hydrologic cycle, will focus on the importance of beavers in the ecosystems, their proliferative effects on surrounding wildlife, forests, plants and ecosystem health. The issues which can occur from beaver dams and how they are being handled by land management agencies will be discussed as well as alternatives. Field studies at our Alpine, AZ Biological Research Station will be required. Prerequisites: none

BIO 677 Insect Toxicology & Lab 4 credits: Chemistry, toxicity, mode of action, metabolism, and environmental considerations of insecticides and related compounds. Mechanisms of resistance to insecticides, natural alternatives to chemical insecticides and environmental impacts will be discussed. Prerequisites:

BIO 678 Sustainability of Indigenous Tribes & Lab (Panama)4 credits: Indigenous tribes surviving globally in the modern world give students a perspective on the sustainability of human beings. By field study expeditions to several Indigenous tribes in Panama, students will gain insight into the worldviews of these Indigenous people, who understand that their lives are part of, and inseparable from the natural world. The relationship of their culture and nature are combined to create a unique sustainability. Prerequisite: none

BIO 679 Fisheries & Marine Sustainability & Lab 4 credits: Fish Biology, ecology, and habitats relevant to fisheries on both a global and regional scale. Studies cover fisheries from cold water mountain rivers to the oceans, including topics such as: aquaculture, artificial reefs, and fisheries bycatch. Sustainability issues of these fisheries are discussed and the methods being utilized to improve the balance of these economies and their fishing industries. Prerequisites: Bio 501

BIO 680 Forest Ecosystems Health & Lab 4 credits: This course focuses on the study of forest health and how it relates to ecological restoration. Natural factors regarding forest health such as: wildlife, insects, diseases and the weather are a few of the topics studied. Natural and human assisted restoration of forests will be included. Prerequisites: none

BIO 680 Research Project Paper 6 credits: A research topic related to your Master's major must be approved prior to beginning the project. At the completion of the research project, a paper will be written and submitted for a grade. . Prerequisites: BIO 500

BIO 681 Advanced Herpetology I & Lab 4 credits: An advanced in-depth study of amphibians and reptiles will review the evolutionary history, phylogenetic relationships, global diversity, life history, and general biology of these important groups. An extensive amount of work in this course will be in our ZooQuarium which house a large variety of live amphibians and reptiles. Students will have hands-on experiences with the

habitats, care and feeding of this large collection of differing species. Prerequisites: Biology undergrad completion

BIO 682 Advanced Herpetology II: Tortoises, Turtles & Lab 4 credits: This advanced Herpetological course of Turtles and tortoises will involve studies of all life systems of tortoises and turtle including: skeletal, reproductive, digestive, lymphatic and nervous. Intensive hands-on experiences with CSE's large collection of live tortoises and turtles will include breeding, incubation and hatchling management along with daily care, feeding and habitat construction. Prerequisites: BIO 681

BIO 683 Advanced Herpetology III: Snakes, Lizards, and Lab 4 credits: This advanced Herpetological course of Snakes and Lizards will involve studies of all life systems of snakes and lizards including: skeletal, reproductive, digestive, lymphatic and nervous. Intensive hands-on experiences with CSE's large collection of live snakes and lizards will include breeding and management along with daily care, feeding and habitat construction. Field trips for evening Herping will be required. Prerequisites: BIO 681

BIO 687 Equine Nutrition, Health and Management & Lab 4 credits: Nutrient requirements of horses which affect their growth, reproduction, and work load. Planning life cycle feeding programs with good health practices and the management of disease prevention safety. Planning for proper housing for health and exercise: Prerequisites:

BIO 688 Advanced Mammalogy I & Lab 4 credits: The study of the natural history, behavior, ecology and evolutionary history of mammals. Students will work extensively in our ZooQuarium and Animal Science Barn while advancing their studies in Mammalogy. Prerequisites: Undergrad Biology completed.

BIO 689 Advanced Mammalogy II & Lab 4 credits: This course focuses on the defining factors of mammals, the physiology of the mammary gland, the anatomy and development of the mammary glands and lactation. The focus will be on livestock species and look at the biochemical, cellular and molecular processes involved in lactation. Milk production and consumption safety will be included. Students will work in our Animal Science Barn with mammals and lactating livestock as well. Prerequisites: Undergrad Biology completion.

Bio 690 Research & Thesis 9 credits: Research and writing of a Master's Thesis with presentation to a Department Panel will be required. Topics must be approved by Dept Head. Prerequisites: BIO 500

ECED 500 Foundations & Philosophies of Early Childhood Education & Lab 3 credits: The history of Early Childhood Education, philosophies, research, and political and legal perspectives will be studied. An understanding of the progression of Early Childhood Education in the US will be analyzed in terms of where education is today in the US and the world. Differing theories of learning research and differing models of Early Childhood education and learning will be compared. Some observations are included. Prerequisites: none

ECED 501 Child Growth & Development, Nutrition, Health & Safety (Birth to Grade 3) 3 credits: A study of historical and theoretical perspectives on the growth and development of the child. Physical, social, cultural, emotional, language, cognitive and personality development will be covered. Environmental and Hereditary factors in a child's home environment and the extent of their impact on child development will be discussed as well as research on the effects of technology on a child's brain. An emphasis will be placed on good nutritional practices, health parameters, health care guidelines and safety in the home/school environments for the young child. Including managing the school environments, both indoor and outdoor, with safety procedures and protocols for young children. All aspects of a child's development: physical, emotional and social are examined along with activity schedules based on age-appropriateness. Prerequisites: ECED 500

ECED 506 Understanding the relationships of Community, Family Dynamics & Cultures 3 credits: This course will explore community, school, family and child cultures. A focus will be on understanding the influences and interactions of all these factors which impact the young child's learning, development and behavior. Emphasis will be placed on creating

positive relationships between all these factors as well as the classroom environment. The relationship between the home environment and brain development relative to exposure to screens will be discussed. Strategies to connect multi-generational family members to the young child and their developing needs will be explored. Prerequisites: ECED 501

ECED 510 Early Childhood Evaluation, Assessments and Reporting Student Progress & Lab 3 credits: Candidates will learn about the different types of assessments for evaluating and monitoring student progress in the young child. They will discuss the benefits and validity of these. Norm-based assessments, state assessments, and teacher prepared assessments will be discussed. Students will practice creating valid tests and methods of grading (subjective vs objective). The importance of monitoring student progress and the utilization of assessments on a variety of levels to drive curriculum and lesson planning will be covered. Students will practice this in class using student tests, state standards and curriculum mapping/planning techniques. Prerequisites: EDU 500

ECED 525 Early Childhood Typical and Atypical Behaviors, Accommodations, Growth & Development, & Lab 3 credits: This course examines developmental milestones of typical and atypical student behaviors. Students will evaluate gifted attributes and disabilities among students from Birth to Grade 3 in early childhood school settings. Interventions for atypical behaviors will be discussed. The role IDEA plays in these early childhood school settings will be explored. Growth and development of the young child will focus on brain development as well as social, emotional and physical characteristics. Observations will be required. Prerequisites: ECED 500

ECED 550 Instructional Curricula Design, Curriculum Mapping & Lesson Planning, including Accommodations & Lab 3 credits: Candidates will cover: Lesson Planning, Curriculum mapping, creation of age/developmentally appropriate activities for both direct and indirect instruction, individualized curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, and awareness of student interactions within curricula which enhances student learning and, positive social and emotional development for the young child. Techniques and strategies to utilize assessments to drive curriculum, modify curriculum and make accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: ECED 501

ECED 595 Teaching Research-based Strategies & Math Methodologies 3 credits: Candidates will analyze content, materials and methods of teaching math, with differentiated instructional methods, to include all young students, including the gifted as well as students with disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. Students will learn how to design hands-on, real-life, multi-sensory activities to teach math skills in a student-centered environment. An emphasis will be on individualized activities and integration with other content area disciplines, while teaching to the state standards and beyond. Prerequisites: EDU 230, EDU 310, EDU 320, and SPED 404.

ECED 596 Teaching Science Methodologies & Integration: Field Studies 3 credits: Students will learn the basic mechanics of teaching Science methodologies with an emphasis on "Discovery" learning, field studies, labs and hands-on learning both inside and outside of the classroom. Teaching to the state standards and beyond, how to assess these application-level methodologies and how to lesson plan will be utilized as students study abroad in Costa Rica or Belize. Prerequisites: EDU530 **Must be taken concurrently with EDU580, and EDU 698.** **plus**

ECED 598 Methods of Teaching Social Studies, Cultures & the Arts: Application Level 3 credits: Field Studies abroad required: A focus will be to integrate the Arts into Social Studies and History through a variety of strategies, lessons and activities. Experiential and discovery learning will be experienced firsthand when taking the portion of this course abroad. Real cultural expeditions will be utilized to demonstrate to the education major "how" to integrate real life experiences into lessons and activities that are engaging and exhibit high retention rates. Multi-sensory integration, "learning by doing" and transferring those activities to paper and pencil, research, art productions, etc. will be emphasized. Classes will be held in school classrooms, and will require classroom observations and interactions with students at CSE's Lab school. Prerequisites: EDU530 **Must be taken concurrently with EDU580, and EDU 596.**

ECED 600 Creating Early Childhood Learning Environments & Management, & Lab 3 credits: Candidates will learn a multitude of strategies to handle a variety of behaviors with early childhood students, including those with disabilities. Classroom management models, motivational techniques, scheduling, room placement of activities, and

student movement within the learning environment for the young child are all factors which will be explored. Students will learn how to structure and plan a learning environment for a student-centered classroom with learning activities using: multi-sensory integration, individualization, differentiated instruction, hands-on experiential learning and engaging, motivating tasks, to promote a positive classroom culture. Field Studies will include interaction with students and teachers in an early childhood classroom environment of these types of models. Prerequisites: ECED 500

ECED 691 Internship Early Childhood (Grades K-Gr.3) 8 weeks 4 credits: Teacher candidates will become competent in the planning for, teaching, and assessment of young students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

ECED 690 Internship Early Childhood Practicum (Birth-K) 8 weeks 4 credits: Teacher candidates will become competent in the planning for, teaching, and assessment of young children in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDESL 500 Instructional Methodologies for Structured English Language Immersion 3 credits: The theoretical principles of language acquisition and the role of culture will be studied. The educational foundations of Structured English Immersion (SEI), historical and legal aspects and other programs for SEI learners will be examined. Effective strategies to promote development and improved student achievement for English Language development will be an emphasis. Students will plan, deliver and evaluate standards-based instruction for English language learners through the use of the Universal Design for Learning. Observations will be required. Prerequisites: EDESL 500

EDESL 501 Foundations & Philosophies of Education for English Language Learners& Lab 3 credits: The history of ELL/ESL Education, philosophies, research, and political and legal perspectives will be studied. An understanding of the progression of ELL/ESL Education in the US will be analyzed in terms of where education is today in the US and the world. Students will explore the differing theories of ELL/ESL learning research and compare and contrast differing models of ELL/ESL education. Some observations are required. Prerequisites: none

EDESL 506 Understanding the relationships of Community, Culture, & Family Dynamics of ESL students 3 credits: This course will explore community, school, family and child cultures of ESL students. A focus will be on understanding the influences and interactions of all these factors which impact the ESL child's learning, development and behavior. Emphasis will be placed on creating positive relationships between all these factors as well as the classroom environment. The relationship between the home environment and brain development relative to exposure to screens will be discussed. Strategies to connect multi-generational family members to the ESL child and their developing needs will be explored. Prerequisites: ECED 501

EDESL 510 ELL & Bilingual Assessments, Reporting & Monitoring Student Progress & Lab 3 credits: Candidates will survey ELL & Bilingual assessments for evaluating and monitoring student progress. Protocols for administering these regulated assessments will be explained. Students will practice creating valid tests and methods of grading (subjective vs objective). The importance of monitoring student progress and the utilization of assessments on a variety of

levels to drive curriculum and lesson planning will be covered. Accommodations and modifications of assessments for ELL & Bilingual students in the regular classroom environment will be examined. Required observations in school classrooms will be required. Prerequisites: EDU 500

EDESL 565 ELL & Bilingual Curricula & Methodologies of Instruction & Lab 3 credits: Candidates will cover: ESL & Bilingual Lesson Planning, Curriculum mapping, creation of appropriate activities for both direct and indirect instruction, individualized curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, and awareness of student interactions within curricula methodologies which enhance ESL & Bilingual student learning and, positive social and emotional development for ESL & Bilingual children. Techniques and strategies to utilize assessments, drive curriculum, modify curriculum and make accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: ESESL 501

EDESL 585 Graduate Studies of Linguistics & Lab 3 credits: A comprehensive study of the fundamental principles of linguistics. Psycholinguistics, sociolinguistics, and first and second language acquisition will be emphasized. Research-based methods of incorporating linguistic principles into teaching practices and methodologies for the ELL/ESL learner will be explored. Prerequisites: EDESL 300

EDESL 600 Methodologies of Teaching and Evaluating ELLs with Special Needs 3 credits: Candidates will cover: ELL Special Education Lesson Planning, Curriculum mapping, creation of appropriate activities for both direct and indirect instruction, individualized curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, and awareness of student interactions within curricula methodologies which enhance student learning and, positive social and emotional development for ELL students with Special Needs with Mild to Moderate Disabilities. Techniques and strategies to utilize assessments, drive curriculum, modify curriculum and make accommodations for ELL students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: SPED 500 and EDESL 501

EDESL 690 Student Teaching Elementary (Grades K-5) ESL Emphasis 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the University Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDESL 691 Student Teaching-Secondary (Gr 6-12) ESL Emphasis 6 credits (8 weeks): Teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree, must be completed and passed BEFORE any Internship can be taken.

EDR 510 Essential Elements of Reading & Writing Instructional Methodologies and Individualization for the Classroom & Intervention 4 credits: Methodologies of teaching Reading and Writing will include: Phonics, Linguistic, and Language experience models. Experiential, hands-on, discovery education techniques

of reading instruction and integration into all subject areas, as well as differentiating and individualizing reading for all ages will be learned, demonstrated and observed in school settings. Delivery systems including direct and indirect instruction with independent, individualized, differentiated learning activities for all learners including ESL and students with disabilities will be explored. Prerequisites: EDR 514.

EDR 511 Essential Elements/Methodologies of Secondary Reading & Writing Instruction 3 credits:

Methodologies of teaching Reading will include: The essential elements of Reading and Writing Instruction for the secondary levels will be explored, with an emphasis on vocabulary and comprehension. Usage of Literature books, integrating with content areas and methodologies to evaluate and monitor literature will be explored. Experiential, hands-on, discovery education techniques of reading instruction and integration into all subject areas, as well as differentiating and individualizing reading for all ages will be learned, demonstrated and observed in school settings. Delivery systems including direct and indirect instruction with independent, individualized, differentiated learning activities for all learners including ESL and students with disabilities will be included. Prerequisites: EDR 514.

EDR 512 Reading, Writing & Literature Integration in Content Areas (3) Children's literature and the methods to integrate literature books into other disciplines and as part of a core Reading program will be examined and observed. Appropriate levels of literature, assessments and reading conference evaluations will be learned, providing individualization and differentiation in instruction with real books. Pre and Post reading activities will be created and evaluated. Vocabulary, comprehension and reading skills will be assessed with literature. Prerequisites: EDR 514.

EDR 513 Reading Methodologies, Phonics, Sight Reading, Literacy & Lab 3 credits: Methodologies of teaching Reading will include: Phonics, Linguistic/Sight Words, and Language experience models. Experiential, hands-on, discovery education techniques of reading instruction and integration into all subject areas, as well as literature books. Classroom management systems for direct/indirect instruction with independent, individualized, differentiated Reading activities for all learners including ESL and students with disabilities will be included. Prerequisites: EDR 514.

EDR 514 Reading Assessments, Evaluation, Student Monitoring & Intervention 3 credits: A comprehensive survey of Reading assessments for both individual and group testing protocols. Evaluation of student assessment results, intervention and remediation for students as well as monitoring achievement and reporting progress will be covered. Prerequisites: EDR 510

EDR 516 Reading Research & Brain-Based Learning 3 credits: Research & studies focusing in the development of Reading, brain-based learning and implementation of strategies in instruction will be explored. Prerequisites: EDR 514

EDR 518 Early Literacy, Phonics and Emergent Readers 3 credits: Candidates will study phonetic and linguistic approaches, to Reading, hands-on activities focusing on skill development, book making through Language Experience, literature books, creating a "print-rich" environment and engaging young students. Direct instruction and individualized activities utilizing a multi-sensory model and strategies to modify and accommodate these as needed for differentiating instruction for emergent readers, including ESL and students with disabilities. Prerequisites: EDR 516

EDR 519 Theoretical & Research Foundations of Language and Literacy 3 credits: Research and theories on the foundations of Language and Literacy development in all children will be discussed. Brain-based research as well as influential factors in the child's environment, including screens and technology and the effects of these on their language and literacy development, especially at early stages will be studied. Prerequisites: EDU 520

EDR 521 Effective Leadership of Curriculum & Instruction in Reading (3): Leadership roles focused in curriculum & Instruction of Reading and Literacy will be explored. Understanding the regulations & requirements of Reading intervention, state and Federal laws, SPED & ESL integration of Reading and the Reading Professional's role in implementing these will be a major focus. Professional Development for teachers in these areas will be included.

EDR 526 Reading Assessment systems for Intervention & Corrective Reading: Practicum (K-8)

Required-8 weeks (4) A comprehensive survey of K-8 Reading assessments for both individual and group testing protocols. Evaluation of student assessment results, intervention and remediation for all students, as well as monitoring achievement and reporting progress will be covered. Prerequisites: EDR 510

EDR 540 Assessing Reading & Diagnosis, Corrective Reading/Intervention & Dyslexia & Lab 3 credits: A comprehensive survey of Reading assessments for Diagnosis and Evaluation of student Reading skills and reading levels for classroom instruction will be examined. Student results, intervention and remediation as well as monitoring achievement and reporting progress will be covered. An individual case study of a student in a school setting will be completed including: individualized testing, diagnosing, creating remediation and intervention activities, teaching these and re-evaluating. A comprehensive Student Case Study report will be required to pass this course. Prerequisites: EDR 510

EDR 610 Reading Resources, Methods and Print-Rich Environments 3 credits: Students will explore the many resources for teaching Reading on the market today, as well as learn how to make their own reading-based materials. Methodologies of Reading Instruction beyond a commercial reading series and teacher editions will be discussed and practiced. The elements of creating a true, Print-Rich learning environment will be exercised and observed in real school classrooms. Prerequisites:

EDR 625 Current Issues and Trends In Reading Education 3credits: A brief look back into Reading Instruction trends and developments in the past, leading up to the present will be examined. Brain-based research, Intelligence models, Books vs computers research, Phonics vs Linguistic approaches to Reading, Language Experience, Print-Rich Environments and Multi-sensory Integration will be included with other current trends. The pros and cons will be discussed. Prerequisites: EDU EDR 510.

EDR 680 Secondary Reading Assessment systems for Intervention & Corrective Reading: (3)A comprehensive survey of Secondary Reading assessments for both individual and group testing protocols. Evaluation of student assessment results, intervention and remediation for all students, as well as monitoring achievement and reporting progress will be covered. Examination of Nationally recognized standardized test for high school students will be analyzed. Prerequisites: EDR 510

EDR 690 Reading Instruction & Intervention Internship Gr K-8 (8 weeks) 4 credits: Reading teacher candidates will become competent in the planning for, teaching, and assessment of students in intervention and/or classroom settings. Candidates will work with a mentor teacher to practice using various models of teaching Reading and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom/Reading teacher under the mentorship of their supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence **MUST** be displayed in all areas of the teaching of Reading to pass this internship, including: Reading Assessing, evaluating assessments, creating individualized plans for students, engage learners in activities and lessons to address their areas of weakness in Reading and re-assess for achievement results. Prerequisites: All required coursework for the Reading Education degree being pursued must be completed and passed **BEFORE** any Internship can be taken.

EDR 691 Secondary Reading Practicum Internship Grades 6-12 (8 weeks) 4 credits: Teacher candidates will become competent in the planning for, teaching, and assessment of students in intervention and/or classroom settings. Candidates will work with a mentor teacher to practice using various models of teaching Reading and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom/Reading teacher under the mentorship of their supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching of Reading to pass this internship, including: Reading Assessing, evaluating assessments, creating individualized plans for students, engage learners in activities and lessons to address their areas of weakness in Reading and re-assess for achievement results. Prerequisites: All required coursework for the Reading Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDR 692 Reading Assessment Systems for Intervention & Corrective Reading Practicum Gr K-8 (8 weeks) (4): Reading teacher candidates will become competent in the planning for, teaching, and assessment of students in intervention and/or classroom settings. Candidates will work with a mentor teacher to practice using various models of teaching Reading and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the Reading teacher under the mentorship of their supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching of Reading to pass this internship, especially: Reading Assessing, evaluating assessments, creating individualized plans for students, engage learners and create activities and lessons to address their areas of weakness in Reading and re-assess for achievement results. Individual Assessments are the focus in this course. Prerequisites; All required coursework for the Reading Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDR 693 Reading Assessment systems for Intervention & Corrective Reading: Secondary Practicum Required (Gr 6-12) (8 weeks) (4) A comprehensive survey of Secondary Reading assessments for both individual and group testing protocols. Evaluation of student assessment results, intervention and remediation for all students, as well as monitoring achievement and reporting progress will be covered. Examination of Nationally recognized standardized test for high school students will be analyzed. Prerequisites: EDR 511
EDU 500 Methods of Research 3 credits: Research methodologies in the field of education will be studied, along with significant examples of Educational Research. Methods of data collection through research texts and field studies will be explained and practiced. Data presentation and paper writing will be included. Prerequisites: BS degree

EDU 501 Foundations & Philosophies of Education & Lab 3 credits: Education History, philosophies, research, and political and legal perspectives will be studied. An understanding of the progression of Education in the US will be analyzed in terms of where education is today in the US and the world. Different theories of learning research and a variety of models of education instruction and learning will be discussed. Field Observations will be required. Prerequisites: none

EDU 506 History of Educational Philosophy 3 credits: A comprehensive study of Educational Philosophy and pedagogy from its earliest beginnings to modern day. Prerequisites: none

EDU 510 Evaluation, Assessments and Reporting Student Progress & Lab 3 credits: Candidates will learn about the different types of assessments for evaluating and monitoring student progress. They will discuss the benefits and validity of these. Norm-based assessments, state assessments, National Standardized Assessments and teacher prepared assessments will be discussed. Students will practice creating valid tests and methods of grading (subjective vs objective). Formative, Summative & Authentic assessments will be included. The importance of monitoring student progress and the utilization of assessments on a variety of levels to drive curriculum and lesson planning will be covered. Students will practice this in class using student tests, state standards and curriculum mapping/planning techniques. Prerequisites: EDU 500

EDU 520 Graduate Studies in Student Growth & Development: Prenatal to Adolescence & Lab 3 credits: Prenatal to Adolescence & Lab 4 credits: A comprehensive study of historical and theoretical perspectives on the growth and development of the young child. Physical, social, cultural, emotional, language, cognitive and personality development are the main topics covered. Environmental and Hereditary factors in a child's home/culture and the extent of their impact on child development will be discussed. Research on the impacts of technology on a child's brain, the importance of social interaction, play and hands-on experiential learning will be explored. Prerequisites: PSYCH 511 or its equivalent

EDU 521 Designing Curriculum & Instruction, Lesson Planning, Curriculum Mapping, & Differentiating Instruction with Accommodations 3 credits: Candidates will cover: Lesson Planning, Curriculum mapping, creation of age/developmentally appropriate activities for both direct and indirect instruction, individualized, differentiated curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, interdisciplinary curricula and projects, simulations, and awareness of student interactions within curricula which enhances student learning and, positive social and emotional development for all learners. Techniques and strategies to utilize assessments to drive curriculum, modify curriculum and make accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: EDU 500

EDU 530 Creating Engaging Learning Environments, Management & Monitoring, & Lab 3 credits: Candidates will explore a variety of management models, motivational techniques, scheduling, room placement of activities, and student movement within the learning environment. Students will learn how to structure and plan a learning environment for a student-centered classroom with learning activities using: multi-sensory integration, individualization, differentiated instruction, hands-on, experiential learning and engaging, motivating tasks to promote a positive classroom culture. Monitoring & evaluating student progress within these models will be discussed. Field Studies will include interaction with students and teachers in classroom environments of these types of models. Prerequisites: EDU 520

EDU 540 Reading/ELA Diagnosis, Intervention, Research-based Assessments & Methodologies, Dyslexia & Lab 3 credits: Students will learn how to teach ELA & Reading through a variety of methodologies including both phonetic and linguistic approaches, hands-on activities focusing on skill development, book making through Language Experience, literature books, creating a "print-rich" environment and engaging students in reading and writing. Research-based assessments and evaluations for ELA and Reading will be explored, along with diagnosis techniques, individualizing curriculum and monitoring progress. Direct instruction and individualized activities utilizing a multi-sensory model and strategies to modify and accommodate these as needed for differentiating instruction for all learners, including ESL and students with disabilities will be included. School observations will be required. Prerequisites: EDU 500

EDU 551 Survey of Special Education in Early Childhood & Lab 3 credits: A comprehensive survey of the special education process including the laws and regulations. An introduction to the educational needs of young children with mild to moderate disabilities and their families, with emphasis on characteristics, prevalence, causes, definitions and educational approaches to these disorders and disabilities. Identification of linguistic, cognitive, social and emotional patterns of learning and development for young children with mild to moderate disabilities will be included. Observations will be required. Prerequisites: ECED 500

EDU 580 International Perspectives of Education 3 credits: Students will get a close-up view of education in underdeveloped countries and compare and contrast education systems and their areas of success. Students will be involved in real classrooms in these countries and will interact with students and educational personnel. Prerequisites: EDU 500

EDU 610 Math Methods & Strategies & Lab 3 credits: Students will analyze content, materials and methods of teaching math, with differentiated instructional methods, to include all students, including the gifted as well as students with disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. Students will learn how to design hands-on, real-life, multi-sensory activities to teach math skills in a student-centered environment. An emphasis will be on individualized activities and integration with other content area disciplines, while teaching to the state standards and beyond. Prerequisites: EDU 521

EDU 613 Language Arts/ELA Methods & Lab 3 credits: Students will analyze content, materials and methods of teaching Language Arts with differentiated instructional methods, to include all students, including the gifted as well as students with disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. The conventions of writing, writing formats, and grammar will be covered and exploration of methods to integrate these skills into other content disciplines will be discussed. Students will learn how to design hands-on, real-life, multi-sensory activities to teach Language Arts skills in a student-centered environment. An emphasis will be on individualized activities, while teaching to the state standards and beyond. Prerequisites: EDR 513

EDU 690 Student Teaching Internship K-3 (8 weeks) 3 credits: Candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence **MUST** be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites: All required coursework for the Masters Education degree being pursued must be completed and passed **BEFORE** any Internship can be taken.

EDU 691 Student Teaching Internship 4-8 (8 weeks) 3 credits: Elementary teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence **MUST** be displayed in all areas of the teaching profession to pass this internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites; All required coursework for the Education degree being pursued must be completed and passed **BEFORE** any Internship can be taken.

EDU 696 Teaching Science Methodologies & Integration: Field Studies 3 credits: Students will learn the basic mechanics of teaching Science methodologies with an emphasis on “Discovery” learning, field studies, labs and hands-on learning both inside and outside of the classroom. Teaching to the state standards and beyond, how to assess these application-level methodologies and how to lesson plan will be utilized as students study abroad in Costa Rica or Belize. Prerequisites: EDU530 **Must be taken concurrently with EDU580, and EDU 698.** **Plus**

EDU 698 Methods of Teaching Social Studies, Cultures & the Arts: Application Level 3 credits: Field Studies abroad required: A focus will be to integrate the Arts into Social Studies and History through a variety of strategies, lessons and activities. Experiential and discovery learning will be experienced firsthand when taking the portion of this course abroad. Real cultural expeditions will be utilized to demonstrate to the education major “how” to integrate real life experiences into lessons and activities that are engaging and exhibit high retention rates. Multi-sensory integration, “learning by doing” and transferring those activities to paper and pencil, research, art productions, etc. will be emphasized. Classes will be held in school classrooms, and will require classroom observations and interactions with students at CSE’s Lab school. Prerequisites: EDU530 **Must be taken concurrently with EDU580, and EDU 696.**

EDUL 510 School Finance & Budgeting 3 credits: The intricacies of school finance and building a budget will be the basis of this course. Explanations and details of the USFRCS requirements for procurement, Federal Title Grants and their requirements, capital outlay, bonds, legislative funding, and special state funding will be included. Students will practice preparing a simulated budget. Prerequisites: EDUL 506.

EDUL 512 Education Law 3 credits: A survey of historical laws which impacted education and requirements that are in existence today, due to these significant Supreme court cases. An overview of Federal and State laws which are required to be upheld in schools and their direct effect on buildings, staffing, curriculum, discipline, safety will be explored. AZ State Statutes concerning Education will be examined. Prerequisites: EDUL 506.

EDUL 514 Leadership Roles in Education 3credits: The many different Leadership roles in educational settings and institutions will be examined. Public, private, post-secondary and education-based organizations, such as museums and zoos all have Leadership roles which will be discussed. Students will be required to complete field studies in a variety of these institutions as part of the coursework. Prerequisites: EDUL 512.

EDUL 516 Professional Development, Assessment & Evaluation 3 credits: Planning & Implementing Professional Development for Staff, Staff Assessments and Evaluations, communication & collaboration with teachers and staff for continual self and school improvement. Prerequisites: EDUL 514.

EDUL 518 Effective Leadership of Curriculum & Instruction 3 credits: Curriculum & Instruction leadership in schools and other educational institutions/agencies will be explored. An investigation into the differing and yet similar roles in these varied work places will be studied. Examples of curriculum and instructional methodologies utilized in the different facilities will be demonstrated by students in class with lessons and projects. Effective leadership skills to manage curriculum & instruction in differing situations will be practiced. Prerequisites: EDUL 514.

EDUL 550 Superintendent Administration Internship I -8 weeks 6 credits: Students will intern under the mentorship of a K-8 District Superintendent. Tasks of the Superintendent will be demonstrated and evaluated. Prerequisites: All required and Core Requirements listed above must be passed with a C or better before placement into the Superintendent Administration Internship.

EDUL 575 Superintendent Administration Internship II-8 weeks 6 credits: Students will intern under the mentorship of a 6-12 or 9-12 secondary school district. Tasks of the Superintendent will be demonstrated and evaluated. Prerequisites: Pass EDUL 550 with a C or better.

EDUL 600 Current Issues and Trends In Education 3 credits: A brief look back into Education trends and developments in the past, leading up to the present will be examined. Brain-based research, Intelligence models, technology, STEM, Life Skills, and Multi-sensory Integration will be included with other current trends. The pros and cons will be discussed. Prerequisites: none

EDUL 620 Facilities Operation and Maintenance 3 credits: A survey of the many facets of operating an educational facility including: Energy Efficiency, Building, Landscaping and Grounds Maintenance, Fire Safety & Inspections, Health Dept. Requirements & Inspections, ADA Compliance, and playground/outside space maintenance & safety, to name a few. Prerequisites: EDUL 512, and EDUL 510.

EDUL 622 Employee Management, Labor Laws & School Culture 3 credits: This course introduces Federal and State Labor laws, techniques of employee management, morale and team building, interviewing techniques, and employee evaluations. The importance of school culture starting with school employees and extending to parents, students and communities will be discussed. Prerequisites: EDUL 512.

EDUL 690 Administration Internship I -8 weeks 3 credits: Students will intern under the mentorship of a K-6 elementary school Principal. Tasks of the Principalship will be demonstrated and evaluated. Prerequisites: All required and Core Requirements listed above must be passed with a C or better before placement into the Administration Internship.

EDUL 691 Administration Internship II-8 weeks 3credits: Students will intern under the mentorship of a 6-12 or 9-12 secondary school Principal. Tasks of the Principalship will be demonstrated and evaluated. Prerequisites: Pass EDUL 550 with a C or better.

EDUS 500 Foundations & Philosophies in Secondary Education & Lab 3 credits: Education History, philosophies, research, and political and legal perspectives will be studied with an emphasis on secondary education. An understanding

of the progression of Education in the US will be analyzed in terms of where education is today in the US and the world. Different theories of learning research and a variety of models of educational instruction and learning styles will be discussed. Field Observations will be required. Prerequisites: none

EDUS 510 Secondary Evaluation, Assessments and Reporting Student Progress & Lab 3 credits: Candidates will learn about the different types of assessments for evaluating and monitoring student progress. They will discuss the benefits and validity of these. Norm-based assessments, state assessments, National Standardized Assessments and teacher prepared assessments will be discussed. Students will practice creating valid tests and methods of grading (subjective vs objective). Formative, Summative & Authentic assessments will be included. The importance of monitoring student progress and the utilization of assessments on a variety of levels to drive curriculum and lesson planning will be covered. Students will practice this in class using student tests, state standards and curriculum mapping/planning techniques. Prerequisites: EDU 500

EDUS 521 Secondary Instructional Curricula Design, Curriculum Mapping & Lesson Planning, including Accommodations & Lab 3 credits: Candidates will cover: Secondary Lesson Planning, Curriculum mapping, creation of age appropriate activities for both direct and indirect instruction, individualized, differentiated curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, and awareness of student interactions within curricula which enhances student learning and, positive social and emotional development for all learners. Techniques and strategies to utilize assessments to drive curriculum, modify curriculum and make accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: EDU 500

EDUS 522 STEM Instructional Curricula Design, Curriculum Mapping & Lesson Planning, including Accommodations & Lab 3 credits: Candidates will cover: Secondary STEM Lesson Planning, Curriculum mapping, creation of age appropriate activities for both direct and indirect instruction, individualized, differentiated curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, inter-disciplinary curricula and projects, simulations, and awareness of student interactions within curricula which enhances student learning and, positive social and emotional development for all learners. Techniques and strategies to utilize assessments to drive curriculum, modify curriculum and make accommodations for all students, including students with disabilities will be examined. Curricula in all content areas will be covered. Prerequisites: EDU 500

EDUS 530 Creating Engaging Learning Environments, Management & Monitoring for Secondary & Lab 3 credits: Candidates will explore a variety of secondary management models, motivational techniques, scheduling, room placement of activities, and student movement within the learning environment. Students will learn how to structure and plan a learning environment for a student-centered classroom with learning activities using: multi-sensory integration, individualization, differentiated instruction, hands-on, experiential learning and engaging, motivating tasks to promote a positive classroom culture. Monitoring & evaluating student progress within these models will be discussed. Field Studies will include interaction with students and teachers in classroom environments of these types of models. Prerequisites: EDU 520

EDUS 552 Secondary Science & STEM Teaching Methods, Discovery & Content Integration & Lab 3 credits: Students will analyze content, materials and methods of teaching Science/STEM at the secondary level, with differentiated instructional methods, to include all students, including the gifted as well as students with disabilities. The use of content integration with other disciplines as well as "Discovery" learning to drive lesson planning and curriculum will be a focus. Students will learn how to design hands-on, real-life, application-level activities to teach in a hands-on, STEM lab-centered environment. An emphasis will be on STEM field /lab studies activities, while teaching to the state standards and beyond. Prerequisites: EDU 521

EDUS 690 Secondary Student Teaching Internship Gr 6-8 (8 weeks) 4 credits: Secondary Science STEM teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence

MUST be displayed in all areas of the teaching profession to pass this Secondary internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites: All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDUS 691 Secondary Student Teaching Internship Gr 9-12 (8 weeks) 4 credits: Secondary Science STEM teacher candidates will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all students. Candidates will carry out all roles of the classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this Secondary internship, including: Lesson Planning & curriculum Development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites: All required coursework for the Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

EDUS 695 International STEM Applications: Field Studies 3 credits: Students will study in Costa Rica applying STEM principles for developing real life STEM integration into economic production through active business models. Students will get up close introspection of engineering feats, along side science principles in coffee processing, carpentry machining through water power and technology in the fishing industry.

EDUS 697 Teaching Science & STEM Methods Middle & Secondary: Field Studies 3 credits: Students will analyze content, materials and methods of teaching Science/STEM at the secondary level, with differentiated instructional methods, to include all students, including the gifted as well as students with disabilities. "Discovery" learning to drive lesson planning and curriculum will be a focus. Students will learn how to design hands-on, real-life, application-level activities to teach in a hands-on, STEM lab-centered environment. An emphasis will be on STEM field /lab studies activities, while teaching to the state standards and beyond. Prerequisites: EDUS 521

EDUS 699 Integrating STEM Discovery Methodologies in Content Areas -Field Studies(Costa Rica) 3 credits: A large focus of this course is methodology strategies to integrate and extend STEM/Science Discovery lessons into other content areas: Language Arts, Math, History and Geography. Students will learn Discovery Methodologies being immersed in Costa Rica's Biological biodiversity both in cloud forests and primary rainforests at our three Biological Research Stations: Quinta Clara (mountainous highlands), Golfito Reserve and Piedras Blancas Reserve (primary rainforests). Hands-on Discovery activities will be utilized and explained how to create these Science/Stem lessons with all content areas anywhere in the world, even your own backyard. Prerequisites: EDUS 552

HIST 500 AZ & US Constitutions for Teachers 3 credits: An in-depth study of the United States & Arizona's Constitution, laws and government. The roles of the United States three branches of Government will be studied: Legislative, Judicial and Executive. The US Constitution and its Amendments will be examined as well as laws pertaining to Education. Prerequisites: none

HIST 501 United States: Advanced Historical Studies I 3 credits: An advanced look at the history of the United States from the 1400's to and including the Civil War. The usage of filmed documentaries, full length movies, historical readings, first-hand accounts and primary sources will be utilized to help bring this time period in US history alive. Understanding civilizations during each major time period will be discussed as well as the human condition under which people functioned. Reading books of actual experiences/diaries/journals of major events and eras will be a focus. Prerequisite: none

HIST 502 United States: Advanced Historical Studies II 3 credits: An advanced and in-depth study of the history of the United States from Reconstruction of the Civil War to the Viet Nam War. The usage of filmed documentaries, full length movies, historical readings, first-hand accounts, music and primary sources will be utilized to help bring this time period in US history to life. Understanding the mind set of civilizations during each major time period will be discussed. Reading books of actual experiences/diaries/journals of major events and eras will be a focus. Primary sources will be investigated as well. Prerequisite: none

HIST 510 World History I: Advanced Historical Studies (3500 B.C. to 1600 A.D.) 3 credits: The history of the world with in-depth studies on four major civilizations: Chinese, Middle Eastern, European and Indian. Major events, eras and significant persons will be emphasized through books of specific historical accountings. Historical perspectives of religion, economics, governments and politics will be discussed. Prerequisites: none

HIST 511 World History II: Advanced Historical Studies (1600 A.D. to the present) 3 credits: The history of the world with in-depth studies of major civilizations, events, eras and significant persons will be emphasized through books of specific historical accountings. Historical perspectives of religion, economics, governments and politics will be discussed. Prerequisites: none

HIST 515 Ancient Civilizations I: Advanced Historical Studies 3 credits: (Option to take in Italy) An in-depth study of the Ancient Civilizations of the Roman Empire through field studies to major ancient ruins in Italy. Prerequisites: none (Option to take in Italy.)

HIST 516 Ancient Civilizations II: Advanced Historical Studies 3 credits: (Option to take in Greece) An in-depth study of Ancient Greek Civilization through field studies to major ancient ruins in Greece. Prerequisites: none (Option to take in Greece.) When available.

HUM 516 Cultures of Italy (Must be taken in Italy) 3 credits: This in-depth course will take students on a journey through Italy experiencing ancient and old cities and cultures as well as modern day Italy. The people, religions, foods and architecture along with art and history will be studied and experienced. Prerequisites: None

ITAL 500 Conversational Italian 3 credits: (Field Study in Italy only) Students will venture to Italy for several field study courses while learning Italian in a conversational manner. Students will converse with the locals to carry out every day activities and processes. Specific reading, writing and speaking activities will be required. Prerequisites: none

PSYCH 510 Early Childhood Developmental and Educational Psychology 3 credits: Theory and research on psychological development from Prenatal to adolescence. An emphasis will be placed on Birth to age 8 and the appropriateness of curriculum, materials and learning environments for proper brain development and social and emotional wellbeing. Observations will be included. Prerequisites: ENG 101

PSYCH 511 Child & Adolescent Developmental Psychology & Lab 3 credits: Theory and research on psychological development from Prenatal to adolescence. Applications of Developmental Psychology to classroom management, individual child empowerment and creating a healthy classroom environment for students to learn and thrive will be a focus. Observations will be included. Prerequisites: EDU 500

SPED 500 Special Education Foundations, Philosophies & Research 3 credits: The history of Special Education, philosophies, research, and political and legal perspectives will be studied. An understanding of the progression of Special Education in the US will be analyzed in terms of where Special Education is today in the US. Students will explore the differing theories of learning, research and compare and contrast differing models of Special Education Instruction and learning. Some field studies are required. Prerequisites: none

SPED 501 Learning Environments & Behavioral Management for Mild to Moderate Disabilities & Lab 3 credits: Candidates will explore a variety of behavioral strategies and management models, motivational techniques, scheduling, room placement of activities, and student movement within the learning environment for students with Mild to Moderate disabilities. Students will learn how to structure and plan a learning environment for a student-centered classroom with learning activities using: multi-sensory integration, individualization, differentiated instruction, hands-on, experiential learning and engaging, motivating tasks to promote a positive classroom culture. Monitoring & evaluating individual student progress within these models will be discussed. Implementing student IEP activities within a classroom setting and individualization of these will be examined. Field Studies will include interaction with students and teachers in classroom environments of these types of models. Prerequisites: SPED 500

SPED 503 Instruction & Transitional Design, Lesson Planning, Delivery & Specialized Instruction Methodologies for Mild to Moderate Disabilities & Lab 3 credits: Candidates will cover: Special Education Lesson Planning,

Curriculum mapping, creation of appropriate activities for both direct and indirect instruction, individualized curricula, use of Bloom's Taxonomy & Multiple Intelligences in curricula design, multi-sensory based lessons/activities, interdisciplinary curricula and projects, simulations, and awareness of student interactions within curricula methodologies which enhance student learning and, positive social and emotional development for Special Needs children with Mild to Moderate Disabilities. Techniques and strategies to utilize assessments, drive curriculum, modify curriculum and make accommodations for all students with disabilities will be examined. Curricula in all content areas will be covered.

Prerequisites: **SPED 500**

SPED 504 Advanced Survey of Disabilities: Mild to Moderate & Lab3 credits: A comprehensive study of the special education process with emphasis on the laws and regulations. An introduction to the educational needs of children with mild to moderate disabilities and their families, with a focus on characteristics, prevalence, causes, definitions and educational approaches to these disorders and disabilities will be discussed. Identification of the linguistic, cognitive, social and emotional patterns of learning and development for students with mild to moderate disabilities will be included. Observations will be included. Prerequisites: EDU 500

SPED 506 Assessments, Eligibility, IEPs, Monitoring & Reporting: Mild to Moderate Disabilities & Lab 3 credits: A comprehensive study of Special Education laws regarding eligibility, assessments and diagnostic methods utilized to determine eligibility and the required steps needed to admit a child into SPED for mild to moderate disabilities, as per the law. Varied methods of assessment and data sources for diagnosis and placement for students will be discussed. Required monitoring and reporting of progress per IDEA regulations and state requirements will be emphasized. Prerequisites: SPED 500

SPED 514 Advanced Survey of Disabilities: Mild to Moderate & Lab 3 credits: A comprehensive study of the special education process with emphasis on the laws and regulations. An introduction to the educational needs of children with mild to moderate disabilities and their families, with a focus on characteristics, prevalence, causes, definitions and educational approaches to these disorders and disabilities will be discussed. Identification of the linguistic, cognitive, social and emotional patterns of learning and development for students with mild to moderate disabilities will be included. Observations will be included. Prerequisites: SPED 500

SPED 520 Special Education Policies, Legalities, Transitional Planning, & Individualized Differentiated Instruction & Lab 3 credits: Candidates will survey professional ethical principles, professional practice standards, Special Education Policies and laws and regulations relating to Special Education teachers. Foundational knowledge will be utilized to understand the numerous complex situations of professional practice, and multiple roles that demand constant and vigilant attention to numerous legal, ethical and professional issues. Transitional Planning and Individualized Differentiated Instruction will be covered. Practicum and field experience will be required. Fingerprint Clearance Card will be required. Prerequisites: SPED 501

SPED 525 Collaboration & Communication Techniques, Accommodations & Modifications & Lab 3 credits: Candidates will survey models and theories for effective collaboration and communication with students with exceptionalities, other school professionals, families, colleagues and community members. Teacher candidates will apply collaboration and communication theories and models, incorporating technology, across a wide range of contexts to ensure active involvement in the education process for students with exceptionalities. Practicum/field experience hours: 6. Fingerprint clearance required. Prerequisite: SPED 501.

SPED 605 Language Development & Adaptive Communication with Mild to Moderate Disabilities & Lab 3 credits: Teacher candidates survey how young children grow and develop, recognizing that patterns of learning and development vary individually across cognitive, linguistic, physical, and social and emotional areas while understanding the importance of communicating with families on child development. This survey of the seminal concepts, principles, theories, and research related to development of children with Mild to Moderate Disabilities will allow teacher candidates to build foundational knowledge for supporting individual students' development. Language development needs and the uses of Adaptive Communication to assist these Special Needs students include: utilizing visual aids, multi-sensory approaches, clear language, repetition and reinforcement, assistive technology, and predictable routines. **Prerequisites: SPED 501**

SPED 610 Research Based Language Arts & Reading Methodologies for students with Mild to Moderate

Disabilities & Lab 3 credits: Students will analyze content, materials and methods of teaching Language Arts with differentiated instructional methods, to include all students with mild to moderate disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. Speaking Skills and the conventions of writing, writing formats, and grammar will be covered and exploration of methods to integrate these skills into other content disciplines will be discussed. Reading skills including both Phonetic and Linguistic methodologies of teaching Reading will be utilized. Comprehension skills, Visual Analysis, Phonic Analysis, Structural Analysis and Vocabulary will be the basis for activities and lessons through assessments in these areas of Reading. Students will learn how to design hands-on, real-life, multi-sensory activities to teach Reading and Language Arts skills in a student-centered environment. An emphasis will be on individualized activities, while teaching to the state standards, and their IEP. Prerequisites: SPED 500

SPED 612 Research Based Math Teaching Methodologies for students with Mild to Moderate Disabilities & Lab 3

credits: Students will analyze content, materials and methods of teaching Math with differentiated instructional methods, to include all students with mild to moderate disabilities. The use of assessments to drive lesson planning and curriculum will be a focus. The Math standards will be covered and exploration of methods to integrate these skills into other content disciplines will be discussed. Candidates will learn teaching strategies to help students with Mild to Moderate Disabilities to understand and develop connections with major Math concepts and operations including: number operations, measurement, data and probability, Algebra, and Geometry. Students will learn how to design research-based interventions and methodologies. This will include: hands-on, real-life, multi-sensory activities to teach Math skills in a student-centered environment. An emphasis will be on individualized activities, while teaching to the state standards, and their IEP. Prerequisites: SPED 500

SPED 690 Special Education Mild to Moderate Disabilities Internship (Gr K-5) 8 weeks 6 credits:

Special Education teacher candidates for Grades K-5 will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all Mild to Moderate Disabilities students. Candidates will carry out all roles of the SPED classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Follow state standards and IEP goals in lesson planning & curriculum development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites: All required coursework for the SPED Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

SPED 691 Special Education Mild to Moderate Disabilities Internship (Gr 6-12) 8 weeks 6 credits:

Special Education teacher candidates for grades 6-12 will become competent in the planning for, teaching, and assessment of students in school settings. Candidates will work with a mentor teacher to practice using various models of teaching and a variety of instructional strategies to support the learning of all Mild to Moderate Disabilities students. Candidates will carry out all roles of the SPED classroom teacher under the mentorship of her supervising teacher and be evaluated by both the mentor teacher and the CSE Supervisor. A high level of competence MUST be displayed in all areas of the teaching profession to pass this internship, including: Follow state standards and IEP goals in lesson planning & curriculum development, execution of lessons and classroom management, engage learners and carry out all tasks in a professional manner. Prerequisites: All required coursework for the SPED Education degree being pursued must be completed and passed BEFORE any Internship can be taken.

REL 500 Religions of the World 3 credits: An in-depth study of the histories, and basic practices and beliefs of major religions in the modern world: Judaism, Christianity, Islam, Buddhism, and Hinduism. By studying these religions and their differences, students will be better able to understand these religions and be able to interact with people in our pluralistic world, while maintaining their Christian faith. Prerequisites: none

College Of Science and Education

US and International Biological Stations /Studies Abroad

Piedras Blancas Biological Research Station: (Southern Pacific Costa Rica Rainforest)

This Costa Rican research station is located in one of the most biodiverse areas in the world. It is situated in primary rainforest in the southern-most region of Costa Rica on the Golfo De Dulce, an inlet fiord on the Pacific Ocean. Our research station is on the beach and stretches into the rainforest on 115 acres. It is in the famous Piedras Blancas Reservacion a biological corridor for numerous species of animals, plants, insects, and marine life. Home to jaguars, cougars, jaguarundis, ocelots, toucans, scarlet macaws, caiman, turtles, poison dart frogs, leaf cutter ants, and over 300 species of butterflies just to mention a few. The ocean in front of our lodge is home to dolphins, whales, rays and more! Students will be immersed in the rainforest and study numerous different species first hand. Come join the adventure and study in a most awe-inspiring environment!

Belizean Blue Marine Biology Research Station: (Ambergris Island, Belize)

Belize boasts the 2nd Largest Great Barrier Reef in the world and it is directly in front of our research station. Our facility situated right on the beach on Ambergris Caye features some of the best diving and snorkeling in the world! A mecca for Marine Biology students, these Caribbean waters are teeming with marine life. Sea turtles, stingrays, nurse sharks, eels, giant eagle rays, queen conchs, starfish, sea cucumbers, sea biscuits, sea urchins, numerous coral species, the endangered manatee, beautiful fish species and even dolphins, just to name a few. Just down the road from our station is the Gonzales Mayan ruin as well. Expeditions to the mainland extend your studies to the numerous Mayan Ruins and interesting Mayan culture. The Belizean people are very diverse and share exciting traditions and foods with you, including their delicious home-grown chocolates from their cacao farms. Come climb and swim your way through your courses in Belize. You won't Belize how beautiful it is!!! What a way to earn college credits!!!

Quinta Clara Biological Research Station:(High mountainous region of Costa Rica)

This nice cool station is in the high mountains near Volcan Poas, surrounded by coffee Plantations, mountain Tico culture and nearby Cloud Forests. Located also on a river, this station offers studies in plants and animals living in the cooler forests and feature many opportunities to enjoy the Costa Rican culture and traditions. Visit coffee plantations, Artisan craftsmen, volcanos, cloud forests, historical churches, schools, world heritage sites and even learn Spanish while in the beautiful country. Our famous "Sea Turtle Rescue" field study uses this station as its base while venturing to the Pacific coast to save the Olive Ridley Sea turtles on Ostional Beach. It is the largest sea turtle nesting beach in the world!!! Just as the name Costa Rica means "rich coast", your college studies will be "rich" with experiences you will never forget while in this extremely biodiverse country! Pura Vida!!!

Golfito Reserve Biological Research Station: (Golfito, Costa Rica on the OSA Peninsula)

This research station is located at the base of the fabulous Golfito Reserve in Costa Rica. This region is primary rainforest on the last frontier of Costa Rica called "La Frontera". Our station is bordered by the rainforest and a river which runs right up into the reserve filled with natural volcanic formed waterfalls and hundreds of species of rainforest wildlife. This station is equipped with plenty of living space, sleeping for 24-30 persons, full bathroom and kitchen facilities and internet access for researching information to accompany our full rainforest biology library and daily and nightly field excursions. The quaint little fishing village of Golfito is just outside the door and access to all "town" necessities are minutes away. A hospital, airport and boat taxi services are also available. Studying any course in this biodiverse environment is an experience that you will never forget. Come join the fun and learn in a zoological paradise!!!

Alpine Highlands Biological Station: (Alpine, AZ forests)

This research station is located at 8100' above sea level and is nestled in the beautiful pine forests of Northern AZ. This particular region has numerous examples of different coniferous and fir trees as well as oaks, aspens, pinons, junipers and cedars. This region is home to: elk herds, black bear, mountain lions, big horn sheep, mountain goats, beaver,

pronghorn, skunk, wild turkeys, Canadian Geese, Bald eagles, red-tailed hawks, owls, jackrabbits, and the Mexican Grey Wolf, just to name a few!!! Students will complete field studies in this region as well as be able to work with Game & Fish, Forest Rangers and Fire Control Rangers while studying in this great forest, filled with numerous lakes with 8 different types of trout. Stays cool year-round.

Cedar Ridge Wilderness Research Station: (Snowflake, AZ on the Mogollon Rim)

A geological wonderland in the highlands of Arizona. This wilderness research station is located on 150 acres in between Snowflake and Concho, AZ. Geological studies, forest wildlife, and ancient Native American studies are evidenced in this land region. Hike and explore the arroyos and mesas while being immersed in the geology and cultures of many years past. Discover native wildlife and migratory patterns of elk, deer, mountain lions and more. Excursions from this station are taken depending on the course being studied. Go north and go WILD!!!

Sonoran Desert Biological Research Station:(Saddleback Mountain Region, Tonopah, AZ)

Located just 50 miles west of Phoenix, this 40 acre site is situated in the Sonoran Desert with Saddleback Mountain as a backdrop. Wildlife of the Sonoran desert include many reptiles , birds and mammals. Ecological studies of the Desert Ecosystems are prolific, as well as traces of ancient Native Americans. Enjoy the heat of the day and the cool of the night, while investigating the delicate balance within this Desert biome.

Other International Study Opportunities

Italy-Art, History and Language Expedition: This 2 week, 3 course, 9 credit expedition is NOT required, but available to all students and is only offered in the summer semester. Courses included are: **ART 210 The Great Art Masters I (3 credits)**, **ITAL 200 Conversational Italian (3 credits)**, and **HIST 210 Ancient Civilizations I (3 credits)**.

Africa-A Zoological and Cultural Expedition: This 2 week, 3 course, 10 credits, expedition takes students on an African Safaris studying the great animals of Africa, its Indigenous tribes and the Cultures of Africa. Courses included: **BIO 449(4credits)**, **HUM 312(3 credits)**, and **ART 312(3 credits)** This expedition is only offered in the summer semester at this time.)

Academic Procedures & Protocols

Course Delivery Systems: The majority of our courses are designed to be in person, on our campus in Laveen, AZ or at any of our Biological Stations both in the US and abroad. Field Studies in the US are also part of our in-person delivery of courses. Small portions of the courses may be utilized via an online platform and a few courses may be offered On-Line as well. The courses when listed in the **Academic Calendar of Courses** each semester will specify the delivery system for the course as follows:

I-In-Person, O-On-Line and H-Hybrid. All Hybrid classes will have their first class session In-Person and the Professor will delineate any On-Line sessions for that particular course.

Academic Advisement

All students will be assigned an Academic Advisor to assist them with the planning of their degree program and scheduling of their courses. Yet note, students are responsible for planning their own programs and meeting all the requirements for graduation. Any advice that is given that varies from CSE established policy must be approved by the

Academic Affairs office. Once a student is ready to declare or change their major, he or she should arrange to be re-assigned an academic advisor in that field or department. The form (Student Record Change - Academic Information) for changing academic advisors are available in Registrar's Office.)

Multiple Academic Majors/Minors

Proper planning of class scheduling of coursework, may enable a student to complete more than one major or minor within the minimum of 120 credits required for the undergraduate degree. Students who meet graduation requirements for two or more majors will receive multiple majors with one undergraduate degree (BS or BA). Students majoring in disciplines that qualify for different degrees will receive only one degree through all the majors and minors that are completed. Students will select their degree for graduation at the time of filing a graduation application. To declare additional majors or minors, students will be required to complete a Student Record Change – Academic Information form found online. If a student wishes to complete a second major within the same academic department, a minimum of 15 credits must be different between the first and second major. This policy does not apply to students pursuing a major and a minor within the same academic department.

Dual Degree

College of Science & Education students who are currently enrolled and wish to pursue two undergraduate degrees simultaneously, must fulfill the program requirements for both degrees as well as completion of a minimum of 160 credit hours.

Student Classifications

Currently enrolled students who have been admitted to CSE and are pursuing a degree program are classified in the following manner:

- 0-23.99 credit hours – First year
- 24-57.99 credit hours – Sophomore
- 58-89.99 credit hours – Junior
- 90 or more credit hours – Senior Classification is based on all credit hours earned including transfer credit hours and credit by examination.

Full-time Degree-seeking Students

Full-time degree-seeking students are those who were admitted to CSE with the expectation of completing a college degree and are enrolled in 12-15 credits or more during each term. It is possible to earn a College of Science & Education bachelor's degree in any of our regularly offered majors within eight-ten terms, and most students who earn College of Science and Education bachelor's degrees can complete them within this time. CSE offers 5 semesters per year.

Part-Time Students

Part-time students seeking their degree while enrolled in fewer than 12 credits during a term.

Unclassified Students

A student who has not fulfilled admission requirements or is not pursuing a degree is designated as an unclassified student. This includes students who are currently in high school and plan to take college courses. Unclassified students are allowed to enroll in no more than two regularly scheduled courses in any given term on a space available basis. Once a student has earned 12 credits as an unclassified student, she/he must apply for admission to continue taking classes or seek permission from the Academic Affairs Office.

Credit For Prior Learning

In some cases, students may receive College of Science & Education credits for demonstrating that they have already achieved certain learning outcomes that are the focus of CSE coursework.

Advanced Placement College credit is awarded to those students entering the College of Science & Education from high school who present proper evidence of having taken college level Advanced Placement (AP) examinations in one or more subjects with the College Entrance Examination Board, provided the scores are sufficiently high. Students are required to present the Registrar official AP score reports prior to enrolling for their first term of attendance at the CSE. An AP score of 3 or higher will earn credits in accordance with the credit value of the equivalent college course. No more than 9 credits of AP coursework will be accepted towards a degree program and graduation requirements.

College-Level Examination Testing (CLEP)

The College-Level Examination Program® (CLEP) offers you the opportunity to receive college credit for what you already know. Earn qualifying scores on any of the 33 introductory-level college subject examinations and accelerate your education. The 90-minute exams are administered at the College of Science & Education. For information on current exam fees, call the Office of Student Affairs. To find out more about CLEP, please go to www.collegeboard.org/CLEP. There you will find a list of the examinations available through CLEP, a list of the colleges and universities that offer class equivalencies for CLEP exams, and exam preparation materials. CLEP exams may be scheduled at the College of Science & Education as allowed by available space. CLEP exams cannot be taken for previously attempted courses or for lower-level coursework or coursework that is lab intensive, field study based or coursework that is experiential in design, such as the coursework abroad. All CLEP requests must be pre-approved by the Office of Academic Affairs and the number of credits allowed to be accepted for CLEP will depend on the degree. Please schedule a CLEP exam at least two weeks ahead of the time you would like to take the exam. For more information on scheduling and fees for non-CSE students, please contact the Registrar.

Credit by Examination

If appropriate, a student may seek to earn “credit by examination” for specific CSE courses, by passing a special examination prepared by the instructor of a course. For additional information and to apply for testing, the head of the department should be contacted. A student pursuing this option is not permitted to attend the regular course sessions prior to taking the examination. Permission of the instructor must be obtained and a fee paid before such an examination is administered. Please note, departments are not required to provide credit by examination and specific 235-coursework designed to be lab intensive or field study based, may not permit these courses to be given credit by examination. Only a total of 12 credits may be earned in this manner at CSE.

Credit for Non-Collegiate Educational Experiences (Armed Services)

Veterans may be granted college credit for service schools attended. Recommendations of the Guide to the Evaluation of Educational Experiences in the Armed Forces, prepared by the American Council on Education, will be used to determine if credit will be allowed. For further information concerning financial benefits and credits for service schools, contact the Registrar’s Office.

Experiential Learning Portfolio

The portfolio program, administered by the Academic Affairs Office, is for those whose prior experiential learning cannot be evaluated by any of the methods discussed previously. Students prepare a portfolio explaining and documenting how they achieved specific learning outcomes that are the focus of CSE coursework. The portfolio is assessed for possible credit by faculty in the academic department petitioned. To be eligible, candidates must be admitted students and have earned a minimum of 15 credits at an accredited college or university, at least 12 of which must have been taken as a CSE student. The maximum number of credits able to be earned will be determined by the Office of the Registrar and must be comparable in scope and content, applicable to the program into which credit is requested and that competencies in the

courses be aligned with the program at CSE. A fee equal to 50% of the current undergraduate per-credit-hour tuition will be charged for each equivalent course. Students interested in this option should apply to the relevant department. A minimum of 25 percent of the credit required for any non-degree or undergraduate degree program must be obtained from CSE along with the required expeditionary courses required for each specific Degree. A minimum of 50 percent of the credit required to complete a graduate degree program must be obtained from CSE, along with the required expeditionary courses required for each specific Degree.

Attendance, Course Participation and Performance Expectations

The College of Science & Education is a Christian learning community, and the College expects students to:

- Attend all class sessions and other required activities/labs/field studies
- Meet all deadlines
- Prepare adequately for each class session using appropriate study strategies
- Have and use all textbooks and required materials
- Do their own work
- Listen actively and carefully in class, including following all directions
- Participate in class activities, labs, field studies, expeditions and discussions
- **Write and speak effectively and respectfully to faculty, staff and students**

Faculty members establish specific attendance expectations for their courses. Students will be informed of the expectations by the instructor at the beginning of the term. Unless otherwise specified by the instructor, students are responsible to make up all missed work and class time. Students are expected to attend classes for which they have registered, and any exceptions to this rule will be made explicit by the instructor at the first class session. Any individual who is attending a course section must be properly registered for the course by 4:00 pm on Friday of the first week of the semester. No student will be permitted to register for or attend a class after this deadline. Individuals not properly registered for a course are not permitted to attend the class. Names of any non-registered students attending the class should be reported **immediately** to the Registrar's Office. Exceptions to the attendance guidelines include college-approved guests, such as prospective students who are officially scheduled through the Office of Admission, college employees approved in advance by the instructor, other non-student guests not in regular class attendance as approved in advance by the Registrar, instructor, department chair and when necessary, the Office of Campus Security and Public Safety. These guests should be limited to attending one or two class meetings only. Visits exceeding this amount will require registration and tuition payment.

Administrative Withdrawal/Drop

The last date to withdraw from a course for each term is established and published in the Academic Catalog and on the Academic Calendar. Exceptions to this policy can be petitioned with the Academic Affairs Office in cases of medical excuses, bereavement, deployment, or other reasonable excuses. Being that CSE is a Christian based learning community, students are expected to behave and act accordingly. Students who regularly fail to attend class, fail to complete assigned coursework, or are **disruptive to the learning community** may be subject to an Administrative Withdrawal (AW) by the Academic Affairs Office. To Administratively Withdraw a student, the course instructor is to report any errant behavior to the Academic Affairs Office immediately. The Academic Affairs Office will work with the instructor and student to determine if an AW is warranted. If it is warranted, the Registrar's Office will be notified to have the student withdrawn from the course. The Registrar will commence the withdrawal and notify the student, the student's advisor and the instructor. When a student has failed to attend a face-to-face class or has not been "actively engaged" in an online course

within the published Add/Drop period, she/he will automatically be administratively dropped from the course. This action may result in the student being reduced to less than full-time enrollment status and all Drop refunds will be awarded by the Refund Policy of CSE. Students who officially drop a course before the first session of class will be awarded a 100% refund. Dropping a class after the first session of class will result in a refund percentage as stated in CSE's Refund Policy. No classes can be dropped or added after the first session of class due to the fact classes are on an eight-week term or less, and each class session is 3-4 hours depending on the credit for the course. Therefore, if a session is missed it is equivalent to missing 3-4 classes. After the first session of class, courses can only be withdrawn from and will adhere to the CSE Refund Policy.

GRADES

Final grades for all coursework will use the grading system listed below and are recorded on a student's transcript of record in the Registrar's Office, utilizing the grade points listed.

Letter Grade Percentages/ Grade Points

A 90-100%	4.00
B 80-89%	3.00
C 70-79%	2.00
D 60-69%	1.00 (This grade disqualifies the course from credit towards graduation.)
F 0-59%	0.00 (This grade disqualifies the course from credit towards graduation.)

Other Grades

P/F Pass/Fail Courses taken for a P/F grade must be approved by the Office of Academic Affairs, is limited to 6 credits and cannot be applied to any course that has a Lab/Field Studies or studies abroad component. (Very few courses can utilize P/F grades.)

I Incomplete

W Withdrawn

AU Audit

D or DNC No Credit

IP In Progress

A grade of NC indicates no credit was earned in a class.

Change of Grade

The only acceptable reason for a change of grade (except for "I") after it has been recorded by the Registrar is that there was an error made by a faculty member in determining or recording the grade. To change a grade, the faculty member must complete a Change-of- Grade request form indicating the cause of the error and it must be submitted to the Academic Affairs Office. If the request is approved, that office will forward it to the Registrar, who will record the change of grade.

Final Grade Appeal Process

Students who wish to appeal a final grade should contact the Academic Affairs Office. Final grades may be appealed if a student believes: there has been a misapplication, non-application or a violation of a CSE rule or policy, or according to the syllabus provided. Appeals may involve questions of judgment, therefore, a recommendation that a grade be revised in the student's favor will not be made unless there is clear evidence that the original grade was based on inaccurate,

prejudiced or capricious judgment, or was inconsistent with official CSE policy or the policies stated in the course syllabus. Students shall have protection against inaccurate, prejudiced or capricious academic evaluation through the publication of clear course objectives, grading procedures, and evaluation methods as stated in the course syllabus. Students appealing a final grade will provide written documentation (i.e. copies of assignment instructions, rubrics, syllabi, graded papers, graded tests, other graded assignments, etc.) to substantiate the appeal. The appeal process may include informal procedures and formal procedures that may result in the need for a final grade appeal hearing before a Final Grade Appeal Committee appointed by the Academic Affairs Office. The deadline for initiating a final grade appeal is 15 days after the last day of the term in which the grade was earned and posted.

Incomplete Grades

A grade of incomplete (I) may be assigned in a course when a student, because of circumstances beyond his or her control, is unable to complete the required work by the end of the grading period. All of the following must be true for the student to be eligible to receive a grade of "I":

- The student is unable to complete course requirements because of documented circumstances beyond his or her control (illness, bereavement, approved ADA accommodation letter for extended time or military deployment)
- The student was passing the course up until the condition(s) that created the delay in progression occurred
- The semester is still in progress with at least one assignment or exam due
- The instructor approves the incomplete as a corrective measure

If the instructor agrees to grant an Incomplete, the student is required to complete and sign the top portion of the Incomplete Grade Request Form and then have the instructor complete and sign their portion. The Incomplete Grade Request form can be found in the Registrar's office. The student will state the reason for the request and the proposed completion date. The student is required to meet with the instructor to obtain approval and signature. This form is sent to the Academic Affairs Office for review before being forwarded to the Registrar's Office, and an "I" is recorded on the student's academic record. When the course work is completed, as outlined on the Incomplete Grade Request form, the instructor will assign a final grade and report it to the Registrar by the conclusion of the following term (fall/spring). An extension for an Incomplete beyond the next consecutive term must be approved by the Academic Affairs Office. Only extreme circumstances will allow a student to continue an "I" grade for more than one consecutive term and all "I" grades must be completed within a maximum of one year of the request. The Registrar will monitor forms on file each term and notify instructors on deadlines to submit final grades. If neither a grade (after deadline) nor an extension has been received, the default grade (from the form) will be recorded for the course. If no default grade is recorded on the form, a grade of F will be recorded. Any additional expense incurred with an "I" is the student's responsibility. Students may not graduate with incomplete grades on their academic transcript.

Repeating a Course

A student who has earned a C or lower in any course may choose to take that course again to try to improve their grade. Students may also take courses as a refresher, if they wish to repeat courses for which they already have college credit. Repeats may be allowed if needed to improve one's GPA for admittance into a specific program or graduate studies. Course repeats, when a passing grade has been previously earned, may not be used to meet the minimum credit completion requirements. After a course is repeated, the credits and grade points already on the student's record for that course shall no longer be used to count toward total credits earned or cumulative GPA, and the results of the most recent attempt shall stand as official. Withdrawal from a repeated course does not replace the previous grade earned in the course in the calculation of the student's cumulative grade point average. A student may repeat the course at another institution and the credits earned may be applied toward graduation at CSE, if approved for transfer credit, but the grade earned will not be used in computing a cumulative grade point average. The course taken at CSE will be marked as forgiven (not included in computing cumulative grade point average). Repeated courses may affect federal financial aid. See the Financial Planning Office/Registrar for further information.

Grade Point Average

Grade point average (GPA) is a quantitative index of a student's academic achievement. The GPA is determined by dividing the total number of grade points by the total hours for which the grade points were assigned. Courses in which grades of I, P, W, CR, AU, or IP have been assigned are not included in computing the GPA. A grade of F is included in the computation. CSE GPA will be used in determining scholarships (when based on GPA after matriculation at CSE), academic standing, eligibility for graduation, graduation honors, and eligibility for Honor Societies. CSE GPA will include only those credits earned at CSE.

Dean's List

Full-time students in good academic standing (registered for and having earned 12 or more letter grade credits for the term) who earn a term GPA of 3.5 or higher and who do not have any grades of Incomplete (I) for the term are placed on the Dean's List. Once grades have been submitted for any Incompletes, Academic Affairs will review their eligibility again for possible placement on the Dean's List for the given term. Dean's List is awarded for all terms.

Academic Standing / Academic Probation, and Suspension

Graduation at the College of Science & Education requires a minimum grade point average (GPA) of 2.00 for 120 credit hours of course work. Any student whose CSE GPA falls below 2.00 will either be placed on academic probation or academically suspended from the College of Science & Education. Students must also maintain progress toward completion of their degree by successfully completing a minimum of 3-4 credit hours each term. The Academic Affairs Office will issue a written notice of probation or suspension to the student and the academic advisor if they fall below the required academic progress requirement. Academic probation or suspension will be recorded on the student's transcript. NOTE: Please see the Financial Planning section of the College undergraduate catalog for details of the Satisfactory Academic Progress policy as it pertains to financial aid eligibility.

Academic Probation: Students will be placed on academic probation when they have one of the following: • a cumulative GPA of less than a 2.00 • a cumulative GPA of 2.00 or higher but have obtained a term GPA of less than a 2.00; • or they do not complete a minimum of 3-4 credit hours for the term. Students who are placed on academic probation will be notified. Students will remain on academic probation until they have achieved: a cumulative and term GPA of at least 2.00, and they successfully complete a minimum of 3-4 credit hours for the current term. A student will not be penalized if one of the following applies to him/her: • He/she has an incomplete grade(s) that will be completed by the end of the following term. • He/she has completely withdrawn from the College earning all 'W' grades. Students who are placed on academic probation must meet with both their academic advisor to develop a plan to improve academic performance. Students on academic probation are limited to 13 credit hours and will be required to create and follow an Academic Performance Plan.

Academic Suspension: First Year and Transfer students who earn a 0.0 cumulative GPA in their first term at the College of Science & Education are subject to academic suspension. The suspension is appealable and the appeal process is outlined below.

Students on academic probation who do not perform satisfactory work towards removing themselves from academic probation during the next term in which they are enrolled are subject to suspension or dismissal by the Academic Affairs Office. The College reserves the right at any time to suspend any student who is not making satisfactory academic progress towards a degree. The time period of suspension will be for at least one term (fall, spring, or summer). Students requesting to return to the College of Science & Education after the suspension period should contact the Admissions Office to apply for re-admission. Students returning to CSE after being academically suspended will be re-admitted on academic probation. Students placed on academic suspension or probation at the end of a full term may have their academic records reviewed to determine if any academic credits received for summer coursework, either in residency or elsewhere, will affect their academic standing. It is the responsibility of the student to notify the Registrar of any coursework taken prior to the start of the new term.

Suspension Appeal Process: A student suspended from the College of Science & Education has the right to appeal. The information provided in that appeal is the basis for decision from the Academic Standing and Admission Committee. Students who are readmitted after suspension and fail to do satisfactory work toward achieving good academic standing may be dismissed from CSE and will not normally be allowed to re-enter at a later date. A student that does not appeal his/her suspension and then wants to return to the College of Science & Education must request an application for re-admission from the Admissions Office. Applications should be submitted one month prior to the term for which the student wants to re-enroll.

Re-Admission Application Process: A student must submit a written explanation of his/her situation that led to suspension and measures being taken to remedy these issues in the future. In the explanation, the student must demonstrate a strong commitment to improving his/her past academic record. In addition, a student who has been suspended and wishes to apply for re-admission must meet the criteria found in his/her letter of suspension from CSE. The criteria normally include successfully taking courses elsewhere and/or receiving counseling/study skills assistance.

Academic Dishonesty Policy

Academic dishonesty is defined in the Code of Conduct section of the Student Handbook. A determination of academic dishonesty typically results in the imposition of progressive sanctions; specifically:

- First offense: A grade of zero points or no credit for the quiz, test, examination or work.
- Second offense: A grade of F or No Credit for the course and may not participate in co-curricular activities for one full year.
- Third offense: In addition, the same sanctions applied for a Second offense, the student is subject to dismissal from the College.

Academic dishonesty offenses are subject to appeal by the student. Faculty & students should consult the full policy for details. Student's Right to Petition In any disagreement over the interpretation of academic regulations or the existence of extenuating circumstances which might justify special consideration, the student may file a petition with the Academic Affairs Office.

Transfer Students

The progress of transfer students will be evaluated on a case-by-case basis. After the Registrar has evaluated transfer credit hours, the student will develop an academic degree plan with the faculty advisor. Transfer students, at the time of matriculation to CSE, will enter with a class standing in accordance with the number of credits earned and accepted by the College of Science & Education for prior education at other institutions. Official transcripts should be sent to the Office of Admissions directly from the other institutions attended. To be transferrable, coursework must be completed at a regionally accredited institution or an institution that is recognized by the U.S Department of Education (USDE) and Council for Higher Education Accreditation (CHEA). Coursework completed at institutions that are not recognized by the USDE and CHEA will be reviewed by the registrar to determine if any credits can be applied toward a CSE degree. Examples of non-regionally accredited institutions include those accredited by national and specialized accreditors. The Registrar will work with the faculty to determine if the institution can be qualified. The Office of the Registrar can provide more information about the transfer of credits from specific non-accredited institutions. Semester credits: CSE credits are semester credits. In transferring courses credited in quarter hours, the conversion formula is [semester credits] = $[(2/3) \times (\text{quarter credits})]$.

Course Equivalency Approval for Current College of Science & Education Students

Approval by the CSE Registrar is required for courses taken at other institutions, if the student wishes to transfer the course back to CSE to fulfill a graduation requirement, prior to enrollment and completion of outside coursework. Students are encouraged to consult with the CSE Registrar's Office on questions regarding transfer equivalency of courses.

Transferring Credits

The College of Science & Education will evaluate all non-remedial courses passed at an accredited institution, provided the overall grade average for those courses is 2.0 or better. If the student's cumulative grade point average (GPA) at the institution from which the credits are transferred is less than 2.0, the College will only evaluate credit for courses in which grades earned were C or better. A course with a grade of "P" or "S" may be awarded transfer credit at the discretion of the Office of the Registrar. The equivalent number of credit hours, as offered at CSE, of developmental credit from an accredited institution may be awarded. Military credit will be evaluated on an individual basis and generally awarded as elective credit(s) toward Bachelor's degree requirements with a grade of CR. Transfer students should note that courses deemed equivalent to the skills courses of the CSE General Education Coursework will not transfer to the College of Science and Education with a grade of less than C, independent of the cumulative grade point average for all transferring credits. Courses awarded transfer credit will be indicated on the College of Science & Education's transcript by the name of the College attended and the total number of credits accepted for transfer. Transfer courses are not calculated into the CSE's grade point average. If a student completes a course at CSE that had previously been awarded transfer credit from another institution, the transferred course will be marked as a repeat and the student will only receive credit for the CSE course. CSE requires that all transfer credits be comparable in scope and content, applicable to the program into which transfer is requested and that competencies in the transferred courses be aligned with the program into which it is being transferred. Student Preparedness, age of the credit and the grade earned will also be scrutinized. A minimum of 25 percent of the credit required for any non-degree or undergraduate degree program must be obtained from CSE along with the required expeditionary courses required for each specific Degree. A minimum of 50 percent of the credit required to complete a graduate degree program must be obtained from CSE, along with the required expeditionary courses required for each specific Degree.

Non-transferable credits

Non-collegiate level coursework that was intended to be a review of secondary material (for example, but not limited to, English, mathematics or reading enrichment courses), credit awarded for intercollegiate athletic participation, physical education activity courses, and continuing education units (CEUs) may not be awarded transfer credit. In general, vocational technical training is not eligible for transfer credit. Military Occupational Specialty courses are evaluated on a case-by-case basis using ACE-approved JST military transcripts. Coursework that is found to be similar in content to CSE courses may be awarded transfer credit.

Transfer Equivalency Decision Appeal

If, upon review of the official transfer equivalency form, an accepted student disagrees with the equivalency decision, that student may appeal the decision by following the instructions below:

1. The student must arrange for the course syllabus to be sent to the Office of the Registrar.
2. The Registrar will work with the appropriate faculty to determine a) if the original decision is accurate and b) why the decision either is or is not accurate.
3. If the original decision is accurate, the student will be notified that no change to their transfer equivalency decision has been made.
4. If the original decision is inaccurate, the student's record will be updated to reflect the updated decision and the student will be informed of the update. If any change to the student's transferred equivalencies results in duplication of credit, the transfer credit is forfeited.

Special Procedures for International Credit

International credit must be evaluated by an independent evaluation service (with the exception of credit that was earned through an approved study abroad experience) and a course-by-course evaluation must be submitted in order to be considered. Courses that are found to be similar in content to CSE courses may be awarded transfer credit. If a chosen academic major does not count grades of less than a C in courses taken to fulfill major requirements, it may be necessary

to repeat a course or courses. Students should be aware that a minimum cumulative grade point average (GPA) of 2.00 for all credits taken as well as a minimum grade point average (GPA) of 2.00 for credits in an academic major is required for graduation. Consult department listings for specific details on GPA requirements of all majors. Transfer students must earn a minimum of 24 credit hours in their major area of study (some majors may have additional requirements) and earn a minimum of 30 of their last 36 credit hours in residence at the College of Science & Education. Students entering CSE with an Associate of Arts or Associate of Science degree from an accredited two-year or four-year institution, will be considered to have completed most of the CSE General Education Curriculum.

Second Bachelor's Degree

The requirements for students who have completed a Bachelor's degree from an accredited institution and wish to pursue an additional Bachelor's degree at the College of Science & Education are as follows:

- With submission of an official transcript of previously completed credits/degrees, all College of Science & Education General Education Curriculum requirements will be satisfied.
- Declaration of an academic major not previously completed at another accredited institution.
- A minimum of 30 credit hours must be completed in residence at the College of Science & Education.
- No more than 6 of the final 36 credits prior to degree completion may be taken outside of the College of Science & Education
- An overall grade point average of 2.00 for all credits completed at the College of Science & Education is required unless the selected major requires a higher overall GPA.
- A GPA of 2.00 for all credits applicable to the academic major is required unless the major selected requires a higher GPA for that program.
- The student must be in good academic standing at the CSE at the time of degree completion.
- A minimum of 160 undergraduate hours (from the College of Science & Education and other institutions) is required. Students enrolling for the second degree will have their previous course work evaluated to determine the number of credits needed. Due to the fact that CSE utilizes an Experiential Learning based curriculum with Labs, field studies and studies abroad, specific coursework will be required to fulfill the credits needed for graduation of that specific major. Transfer students, at the time of matriculation to CSE, will enter with a class standing in accordance with the number of credits earned and accepted by the College of Science & Education for prior education at other institutions.

Academic Transcripts

CSE transcript requests can be completed online or at the Registrar's Office. In compliance with the Family Educational Rights and Privacy Act of 1974, transcripts cannot be released when requested by telephone nor do we accept requests via e-mail or fax. Official transcripts will be provided free of charge to CSE graduates applying for admission to CSE's graduate programs.

Graduation: Application for Degree

There is one annual Commencement ceremony in the Spring. A student intending to graduate from the College must apply for their degree by submitting a completed Graduation Application form according to the application deadlines:

- Graduation Application forms are available online/Registrar's Office and deadline dates are listed on the forms. Applications are good for one year after the initial intended date to graduate. For example, if you intend to graduate April 2029 and fail to meet the requirements at this time, your application will remain on file until April 2030. If you have not met the requirements by this time, you will need to re-apply for graduation and pay the full graduation fee. If you complete an additional degree (after your initial degree conferral), you will need to complete a Graduation Application

with the new degree and pay the full graduation fee. Students should be aware that participation in the commencement ceremony is not equivalent to graduation from CSE and that, if they ‘walk’ before their graduation requirements have been completed, they will not be permitted to walk again when they do graduate. A student may participate at Commencement once per degree. **All financial obligations to CSE have been satisfied.**

Spring Commencement Participation Policy

Students in the following categories may participate in the Spring commencement ceremony:

- Students who successfully completed all scheduled classes for the last attended term and have completed all degree requirements at the conclusion of their last term.

All financial obligations to CSE have been satisfied.

Change in Degree Requirements

A graduating student may choose the academic requirements of a catalog for ten years following the last year noted on the catalog cover, provided the student was enrolled at the College during the time of that catalog. For example, a student attending the college during 2020 may follow the provisions of the 2020-21 catalog through August of 2030. If the student remains enrolled for a term in 2024, the student may elect to follow the 2024-25 catalog in place of a previous edition and will have until August of 2035 to follow the provisions of that catalog. If a student re-enrolls after a ten-year absence, the student must follow the provisions of the catalog current at the time of re-admission.

Graduation With Honors

Honors status awarded at graduation for bachelor degrees are cum laude, magna cum laude, and summa cum laude. Such honors are based on the cumulative grade point average:

- Cum laude is awarded to those who earn a cumulative average of at least 3.50
- Magna cum laude at least 3.75
- Summa cum laude at least 3.90

Confidentiality of Student Records

The College follows the general policy of not releasing personal student information to outside agencies without the expressed written consent of the student. The College will make periodic evaluations of the information placed in student records to assure that only information related to the specific purpose of the educational program be collected and maintained. Student Records are maintained digitally/electronically in perpetuity.

A student’s record shall be construed as containing the academic record, the health record (not including counseling files), the placement files (unless a waiver of right to see references has been signed), along with any record of official College response to disciplinary or academic problems. See FERPA details below.

Duplicate Diploma Policy

A duplicate diploma may be issued upon request. The graduate must complete, print and sign the Diploma Replacement Form, (available in the Registrar’s Office) and submit via directions on the form. The duplicate diploma will show the date of the original diploma and will have the signatures of the current College officials and be the current format and size. The fee will be one-half the current graduation fee, to be paid prior to the ordering of the duplicate diploma.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

Pursuant to the Family Educational Rights and Privacy Act (FERPA), Part 99 of Title 34 of the Code of Federal Regulations the College provides the following notice regarding students' education records and personally identifiable information. To the extent provided by law, students may inspect their education records by contacting the Registrar's Office. Students may also seek amendment of their education records if they are inaccurate, misleading, or otherwise believed to be in violation of the student's privacy rights. Students must request an amendment to their education record in writing to the Registrar's Office. The College will respond within a reasonable time to a student request and if the College decides not to amend the student's record the student may request a hearing pursuant to the Code of Federal Regulations 34 CFR 99.21. The College may not disclose information that personally identifies a student or one of their family members, or makes either the student or one of their family members easily traceable, unless the student consents to such disclosure or the situation calling for disclosure is permitted without consent under FERPA (See FERPA and the Code of Federal Regulations 34 CFR 99.31 for a list of permitted disclosures). In cases where disclosure of personally identifiable information is subject to College discretion under FERPA the College reserves the right to make such disclosures. A student may file a complaint with the Department of Education concerning alleged violations by the College of the student's rights under FERPA and Part 99 of Title 34 of the Code of Federal Regulations. Students desiring to file a complaint with the Department of Education should refer to the Code of Federal Regulations, 34 CFR 99.63 and 99.64, for the applicable procedures. The College has a policy of disclosing education records, which may include personally identifiable information, to College officials and faculty members that have a legitimate educational interest in such information. College officials or faculty members have a legitimate educational interest in accessing or reviewing a student's educational records, if the faculty or staff member is:

- performing a task that is specified in his/her position description or contract;
- performing a task related to a student's education or to student discipline;
- providing a service or benefit related to the student or student's family;
- maintaining safety and security on campus, or
- otherwise pursuing a legitimate business interest of the College.

A "college official," for the purposes of this section, is any employee of the College who must access or review educational records of students in order to efficiently and effectively perform any part of her/his employment duties or responsibilities and any employee or agent of the College authorized by the President to perform duties or take action on the behalf of the College that requires access to student educational records.

Student Records are maintained digitally/electronically in perpetuity.

Disclaimer for Off-Campus/Co-Curricular

Students and faculty at the College of Science & Education are encouraged to take advantage of the multitude of educational opportunities available within the vicinity of the College and our many locations in the United States and abroad. Students will be encouraged to attend campus events and, will be required to attend off-campus field studies/Labs and or studies abroad that are an integral requirement for some on-campus courses. Students will often be required to provide their own transportation to and from off-campus activities and events that occur in the area. The College of Science & Education will generally provide assistance with transportation upon request by a student, but assumes no obligation to do so. Students are required, as a condition of their enrollment, to assume all risk and liability associated with their transportation to and from campus and attendance at, off-campus field studies/labs, etc., whether for required coursework or voluntary activities.

Registration

Registration Dates can be found online or contact the Registrar's Office. Once a student has completed registration and signed an Enrollment Agreement, they are financially and academically responsible to the College of Science & Education, until they officially change their status.

Program or Course Cancellations: CSE reserves the right to cancel a program or course any semester of the Academic Calendar year, without recourse. The course will be cancelled prior to the start of the first class session and students will be given a refund or be changed into another course that is open during that semester. In the case of a program cancellation, refunds will apply as stated above. Students enrolled in a program being cancelled will be advised about other options available for their continued education at CSE and may apply their tuition to the newly chosen program, rather than receive a refund. Instructors assigned to a particular course may change, without notice, at any time and in the case of an instructor change, students will NOT be allowed to change classes or request a refund, unless it is within the Drop/Add period of time.

Add/Drop Periods

Shortened Add/Drop times are due to the fact CSE classes are usually held once a week for 3-4 hours, instead of three to four times a week. So, missing one class is equivalent to missing three-four classes. Classes may be added before the 2nd day/session of classes without instructor approval. Students adding a class by the 3rd day/session of classes must have written approval of the faculty member teaching the class. Classes may be dropped through the end of the 1st day/session of classes each term. With the written approval of their advisor, students may drop classes through the end of the 2nd day/session of the term. Published add/drop dates can be found on the academic calendar. Refunds will only be allowed as per the CSE Refund Policy.

Prerequisites

Specific courses require learning prerequisites to be met prior to admission into the course. In the course section of this catalog, course prerequisites are listed at the end of each course description, if required. All prerequisites for a given course must be met with a completed passing grade of at least 2.0 before registering for the next course. Students who enroll in a course without successfully completing the required prerequisites will be dropped from the course. Students are responsible for checking for prerequisites and may get assistance from their Academic Advisor. It is not the responsibility of the faculty member teaching the course to verify a student's completion of prerequisites.

Academic Course Numbers

Undergraduate Course Numbers

000-099 Developmental Courses: These courses are designed to prepare students for regular college level courses. These may be required before taking a specific 100-200 level course and will NOT be counted toward the 120 credits for a Bachelor Degree.

100 and 200 lower levels: Typically, these are Freshman and Sophomore level courses

300 and 400 levels: These are upper-level courses

500, 600 and higher levels: Graduate credit courses

Credit Hour Load

Fulltime load-12-16 credits (On campus or online)

Part Time load 3-11 credits (A minimum of 3 credits must be taken each term.)

Overload 17-20 credits

A maximum of 20 credits is allowed per term. Exceptions to this must be approved by the Office of Academic Affairs. A written petition for this exception must be submitted 3 weeks before the registration for that term and must be approved before registration.

The College of Science & Education does not allow students to be enrolled at another institution while being enrolled at CSE. Students may not receive credit for courses completed at another institution during the same academic term, unless

prior permission has been obtained for concurrent registration. Prior approval must be obtained by completing the Request to Take a Course at Another College form found online on the Forms drop down.

The total academic load carried at all institutions combined may not exceed the number of credit hours for which the student would be allowed to register at College of Science & Education for any given term (20 credits).

Undergraduate Students Taking Graduate Courses

Some CSE Graduate programs may allow qualified undergraduate students to enroll in graduate courses, based on the following criteria:

1. Be of senior standing and have earned a minimum of 15 credits from the College of Science & Education.
2. Have a 3.0 cumulative grade point average or higher
3. Have no prior history of academic probation, suspension, or academic integrity violations
4. Have submitted a Graduate School Application Form to the Office of Graduate Studies
5. Have obtained approval from their Academic Advisor and the Dean for Graduate Studies No more than one-fourth of graduate credits may be taken and used towards the undergraduate degree. Students must be enrolled full-time at the undergraduate level to have graduate level courses included as part of their undergraduate tuition. If enrolled part-time, the student will be billed at the part-time undergraduate and graduate rates per course. Students taking graduate courses are limited to no more than 1 course (3 to 4 credits) per term, unless permission for more is given by the graduate program director. Because graduate level work is considered more rigorous than undergraduate coursework, it is highly recommended that enrollment not exceed 16 credits total for any term. Should overload be granted, whereby the student exceeds 16 credits, the overload will be billed at the Graduate level tuition rate.

Audit of Courses

Students wishing to enroll in courses without earning college credit should register as auditors. Refer to the Add/Drop Period policy for details regarding registration deadlines and requirements. Completion of a registration (add/drop) form is required along with the instructor's signature. An audit course will not count in the number of total hours attempted. The auditor is not responsible for course requirements such as papers and examinations but is required to participate fully in any other class activities, etc. The grade assigned at the end of the term shall be AU (audit).

Audits may be useful for:

- if you want to explore an area unrelated to your major and the course is outside of your primary interests;
- if you want to review an area you are already knowledgeable in, or;
- if a course is of particular interest but would require an extraordinary effort for you to take for a grade along with your other planned courses. Students who are enrolled in a credit-bearing course may not change their status from credit-bearing to an audit status after the end of the Add/Drop period for the given term. Audited courses are included on a student's transcript. Audited courses may not be used to satisfy any graduation requirements (i.e. majors, minors, core, etc.). For safety and privacy issues, certain programs may not allow courses to be audited. Students must get approval from the course instructor and the Department Head of the sponsoring program prior to enrolling in a course as an auditor. Obtain Audit Course Forms from the Registrar's Office

Confirmation of Enrollment

After registration completion, the student will be able to use MyCSE to review his/her schedule confirm the classes chosen, the credit load, class meeting times, and the room numbers. All financial obligations must be resolved through the Registrar's office before a student is allowed to complete his/her registration for the next term.

Withdrawal from Courses

If the time has passed for the Drop/Add option, a student may withdraw from a course. It must be before the 60% completion mark of the term. The official withdrawal date is published in the academic calendar annually. Withdrawal regulations are: 1) up to the third session/day of classes, the course will be deleted from the student's record; 2) after and including the third session/day classes and through the withdrawal deadline date, a grade of "W" will be recorded on the student's record.

Independent Study Courses

Independent study courses may be taken in the area of a student's major. An Independent Study Form must be completed and signed by the Office of Academic Affairs and a Faculty Member assigned before this course can be registered. Students must be in Junior or Senior standing only and are limited to six hours in a department. These courses cannot replace any specifically required courses.

Internships/Externships

Many programs provide an opportunity for off-campus learning through work place and community service internships. The internships are designed to enrich the chosen academic major through experiential learning and leadership development. Students are required to consult with their Faculty Advisor prior to the start of a term to discuss and complete all required paperwork including: syllabus and assignments; student review; learning agreement; Internship Agreement Form and hold harmless agreement. Internships are designed for specific objectives within a major and will specify the length of such internships as listed in the Degree Plan. Only students officially registered for their internship course can begin working at the placement site. All Internships/Externships or any coursework requirements to be carried out within any school, will require an IVP Fingerprint Clearance Card to be paid for and obtained by the student.

Post-Graduation Additional Majors

Upon application to the Office of the Registrar, a graduate of the college may have a notation added on the permanent record indicating the post-graduation completion of the requirements for an additional major. To qualify, students must meet the major requirements stated in the catalog in effect at the time of their graduation. If the major is not completed until after ten years following the date of graduation, the catalog requirements at the time of completion will apply.

Withdrawal from School

Any full-time or part-time student, wishing to withdraw from school prior to the end of the term, must complete a withdrawal form by the last date to withdraw for the term (see published academic calendar). The request will be reviewed and processed by the Office of Admissions. Due to the fact that withdrawal from courses may affect financial aid, a student should consult with the financial planning office prior to withdrawing from school. A letter grade of "W" will be assigned to each course unless a final grade has already been recorded. Students needing to withdraw from school after the deadline but before the term ends, will first need to seek approval from the Academic Affairs Office. Exceptions to the withdrawal policy may include reasons such as medical, bereavement, or military deployment. If the withdrawal after the deadline is approved, the student will have the following options: 1) Receive a grade of "W" for all courses that term. 2) Receive a letter grade for any course for which the instructor of the class believes sufficient work has been completed.

An Incomplete grade will only be assigned if the instructor agrees and if a specified date for completion of remaining work is on file in the Registrar's Office. Students leaving the College without officially withdrawing will have their work evaluated on the same basis as other students, and appropriate grades will be assigned by their instructors. Students wishing to withdraw from school after the conclusion of the term must complete the withdrawal form, found at the Registrar's Office.

Medical Withdrawal In circumstances when an illness whether mental or physical, prevents an enrolled student from completing the term and an incomplete grade is not warranted or feasible. A student, guardian, or appropriate CSE administrator may request a medical withdrawal from school. These withdrawals must be thoroughly documented and requested in writing to the Academic Affairs Office no later than 30 days after the last day of class attendance or by noon

on the last day of classes, whichever occurs first. In cases of medical withdrawals, students receive a grade of W in all courses in progress at the time of the withdrawal, unless a final grade has already been recorded.

Involuntary Medical Withdrawal

The College reserves the right to withdraw a student if it feels that the safety of the student and/or its members could be jeopardized and has documented information which could suggest a serious medical condition that has obstructed one's educational attendance, participation, studies abroad or field studies in a designated semester. A recommendation in favor of an involuntary medical withdrawal will be submitted to the Dean of Academic Affairs.

Recommendations for Involuntary Medical Withdrawal are made only after extensive involvement with a student in an effort to support voluntary withdrawal has been established and after alternative actions have been exhausted.

Student Military Leave Policy

The College of Science & Education supports all students who are members of any military service unit and are called into active military service by the United States. To assist, as well as protect and safeguard their status as CSE students, CSE has adopted the following guidelines:

Exit Procedures for Students Called to Active Military Duty: To initiate a military leave from CSE, the student must contact the Registrar's Office. This office will collect the proper information and paperwork from the student which must include written documentation of the military instructions. The Registrar's Office will then inform the appropriate offices of the student's military leave. Because every student's situation is different, each leave will be handled on a case-by-case basis. However, certain basic procedures apply and are described in the following paragraphs.

Academic Provisions and Tuition Refunds: 1. The student will receive a full refund of tuition and fees paid to CSE, if the request for withdrawal due to military service is filed prior to the last day to drop classes. 2. The student will have a choice of three options if the request for withdrawal is filed timely; a) A full refund of tuition and fees, no credit awarded for work completed during the semester, and receipt of 'W' grades for the term. b) An incomplete grade in all courses with the right to complete all coursework at a future date without further payment of tuition or fees. In this case, there will be no tuition refund for the present term. c) A grade in each course, if the professor of each class believes sufficient work has been completed. In this case, there will be no tuition refund. d) Options b) & c) may be combined should circumstances warrant.

Military Financial Aid Ramifications:

Students are urged to submit documentation of their military activation to the Student Financial Planning office. This office will determine the impact on any federal, state or institutional financial aid awards that have been provided to the student. **Re-Enrollment:** When the student is ready to return to CSE, he/she will need to re-apply for admission through the Office of Admission. There is no fee for this process. If a student elected to take an incomplete in one or more courses, he/she has until the end of the re-admittance term to complete the appropriate coursework. If the course is no longer offered or if the faculty member is no longer with the College, the returning student will receive a full tuition credit for a replacement course. A policy cannot address every circumstance that may arise when students are called to active duty, therefore, please consult with the Registrar's Office. Appeals of a decision made by the Registrar's Office may be made to the Academic Affairs Office.

Student Military Absence Policy

CSE acknowledges and appreciates our students who have served or are currently serving in our military. In order to support these students, CSE pledges to make every effort to provide reasonable accommodations for students who must be absent from class due to military obligations or required medical treatment for service-connected conditions. The policy provides that students shall not be penalized for class absences due to military obligations or required medical treatment for service-connected conditions. Faculty members will provide reasonable accommodations to make up missed work.

These accommodations may include a selection of comparable coursework as agreed upon by the faculty. If all students have the right to drop a test/quiz grade, military-related absences will not constitute the dropped test and make-up tests unless the student chooses to use this option. Both student and instructor must agree that the length of the absence is reasonable given the type and structure of the course. Student and instructor will sign a plan which details expectations for successful completion of coursework. In situations where the length of absences is detrimental to the student's ability to successfully complete the agreed upon plan and remain current with coursework, it may be within the students' interest to withdraw.

Procedures and Documentation

In the case of military training or drill periods, the student should disclose the leave schedule to the instructor and the Office of the Registrar as soon as the unit provides such documentation. It is understood that training schedules are subject to change and if a change occurs, the student should submit a memorandum from the reservist's unit to the faculty member. If travel is required, a full eight hours shall be excused before or after the military training or medical treatment to allow for travel time. In the case of medical treatment, documentation of a VA appointment may be requested to validate the reason for the absence. Documentation should be provided directly to the instructor or through the Office of the Registrar. If the student chooses to submit it to the Office of the Registrar, the Registrar's office will notify the instructor of the legitimacy of these absences. If the student chooses to withdraw due to lengthy military training obligations or extended medical treatment during the semester, they should be directed to the Office of the Registrar to proceed with the Student Military Leave withdrawal or other necessary procedures.

Academic Services

The CSE Library is an online collection of references and resources available to CSE students. The on-campus Reference Library is available for specific collections of historical materials, periodicals, etc. for use in the Library, during Library hours. Computers and online services are available in the Library as well. Reference librarians are available for individualized research assistance in person at the reference desk Monday through Thursday from 4:pm to 10:00 pm. Extended hours will be posted during Finals week for studying areas. The Past Times Café is located off the main lobby and is available for food, beverages and espressos. Hours will be posted each semester in the Lobby.

Academic Advisors

CSE provides Academic advisors to mentor and assist students with their course and degree planning. First-year students attending CSE directly out of high school and transfer students with less than 24 credits or students who have not declared a major are assigned an Academic Advisor. Transfer students with 24 + credits accepted to CSE are assigned to a Faculty Advisor within the department of their declared major. Advisors are available by appointment to assist students in their career/major search. Academic Tutorial Services works with students who may need extra help academically. Students who are placed on academic probation must meet with their Academic Advisor to develop an academic improvement plan (AIP). These students are limited to 13 credit hours and may be required to make use of academic resources (tutoring, studying) on a regular basis as part of their AIP. Free services include the following: • Tutoring & Writing Consulting • Academic Mentoring • Accessibility Services and Accommodations • Testing Services

Remaining Accountable Accessibility Services and Accommodations

The College of Science & Education (CSE) complies with the Americans with Disabilities Act Amendment Act of 2008 (ADAAA), Section 504 of the Rehabilitation Act of 1973, Fair Housing Act, and other applicable federal and state laws that prohibit discrimination on the basis of disability. CSE encourages students with documented disabilities to fully participate in the community of the College of Science & Education. All faculty, staff, and administrators will actively support students with disabilities in all the College's educational programs, services, and activities. It is the responsibility of the student with a documented disability to initiate a request for reasonable accommodations, based on their disability, by contacting the Director of Support Services.

Testing Services

The College of Science & Education provides the following service when a student meets one or more of the following criteria: • A student has a documented disability and is eligible for a specific accommodation for testing, based on an approved Verification of Individual Student Accommodations (VISA) letter • A student is taking a CLEP, or other approved external exams • Additional situations may qualify with approval. Students should speak with their instructors about each upcoming exam at least five days in advance to allow time for instructors to make alternate testing arrangements.

Provision For Program Modification

The College of Science & Education reserves the right to modify program requirements, content, and the sequence of program offerings for educational reasons that it deems necessary. Programs, services, or other activities of the College may be terminated at any time due to reasons including, but not limited to, acts of God, natural disasters, destruction of premises, or other reasons or circumstances beyond the control of the College. The course descriptions listed are based upon reasonable projections of faculty availability and appropriate curriculum considerations. The matters described are subject to change based upon changes in circumstances upon which these projections were based and as deemed necessary by the College to fulfill its role and mission.

Student Engagement

Student engagement is important part of your time and experiences while attending college. CSE provides periodic events for student engagement and enrichment of their college experience. Many opportunities to travel abroad, be involved in Community Service and Service Learning Projects are available through required coursework and open invitation to all students to participate in these great fellowship and academic events. Nurturing your social, emotional and spiritual self is extremely important to bolster academic and career success. CSE encourages all students to partake in as many of these events as possible. Travel to new places, discovering and learning about different cultures through real life experiences is a basis for which CSE has founded its pedagogic principles. Christian fellowship throughout these wide-ranging activities and expeditions is a necessary gift to our human spirituality.

This handbook serves as the official college statement on such matters. CSE expects that each student has read the Student Handbook and understands the rights and responsibilities it offers them.

Campus Ministry

CSE cherishes Christianity and its values and principles rooted in the belief in God and Jesus Christ. God created humans to be in a relationship with God and with one another, and each person has a purpose on earth. It is our hope that each student shall find their spirituality with God and Jesus Christ and there-in know their reason for being born into God's earth. CSE's Campus Ministry seeks to faithfully follow God and the teachings of Jesus Christ and to apply these into our programs, travel and exploration of his kingdom on earth. The daily ways by which students may encounter the grace of Jesus on campus is through Bible studies, fellowship activities, community and service-learning projects, worship through prayer, guidance through Christian principles, Christian studies through expeditions and study abroad and spirituality through experiencing the beautiful natural world that God has created for us.

Chapel

CSE is a Christian based college which teaches through Christ and God's principles. Our chapel is open for prayer 5 days a week 5pm till 9:30pm. Spiritual healing, guidance and strength are accessed through prayer and CSE invites all students, of all religions to pray in our chapel of the Lord Jesus Christ. For information on special services and events contact Campus Ministry.

International Student Services and Study Abroad

International Student Services & Study Abroad information can be accessed at our International Student Services Office. International advisors provide students with information and counsel regarding United States immigration regulations, assist them with social and cultural adjustment, and encourage their integration into campus engagement. This office is

located in the Main CSE lobby. Studying abroad and experiencing other cultures is a valuable part of every student's college career and life experience. The International Student Services Office coordinates short and long-term international study opportunities for students at both the graduate and undergraduate levels.

Multicultural Involvement

CSE strives to promote a Christian campus of a wide diversity of cultures. In Biological terms, a mono-culture is not a healthy ecosystem. The more Biodiversity the healthier the ecosystem. CSE works to provide a healthy Biodiversity of cultures through its open campus policy to all religious backgrounds and its many international programs of study. These immersive field studies and expeditions to countries abroad facilitates student understanding and good faith towards all people of God's world.

New Student Orientation

New Student Orientation is required for all new CSE students before entering their first college class session. The orientation will familiarize students with campus resources, promote engagement and social belonging opportunities, and to complete any outstanding tasks for entrance into CSE. Information on all CSE 's opportunities available to students including the many on-campus Labs, field study experiences and residential expeditions at our seven Biological & Educational Research Stations in America and abroad. For more information contact the Office of Admissions.

Athletic Facilities

CSE offers a variety of athletic/sports courses. Our gym has a basketball court and weight room for usage by CSE students. Our swimming pool is available for open swim and lap swimming during spring, summer and fall months. Pool and Gym hours are posted in the main CSE Lobby. Students understand there is no Lifeguard present and they are swimming at their own risk. Only CSE students who are actively registered for classes are able to access the pool and gym facilities. No outside guests are allowed except for any public events.

Admission

Admission Requirements: An applicant for admission to the CSE undergraduate program must be a graduate of a high school, possess equivalent (GED), or possess an approved home school diploma. High school graduates should possess a minimum of 15 high school units of which 10 shall be from academic fields (English, Social Studies, Natural Science, Mathematics, Foreign Language). After a thorough evaluation, the Dean of Admission may admit students who fail to meet these admission standards, but demonstrate potential to benefit from and complete a CSE Education. In many cases these students may be admitted with required Tutorial courses to be taken as a condition of admission. First-time college students must have a minimum of a 2.0 GPA (on a 4.0 scale) on all previous high school work. Transfer students who have earned 24 or more college credits must have a 2.0 college GPA. First-time college students who have earned a GED in lieu of a high school diploma must have an overall GED score of 50 or higher. Graduate student must have successfully completed a Bachelor's degree with a minimum of a 2.0 GPA. Students under 18 years of age must have a parent/guardian sign the Enrollment Agreement. All Education students/ and any students required to complete course requirements in any school setting, must obtain an IVP Fingerprint Clearance Card at their own expense.

Application Procedure

Persons wishing to be considered for admission to the College must submit the following for review:

1. A completed CSE Admissions Application for admission to the College of Science & Education (on-line or in person); an official transcript from their high school of graduation completion; with Admission deposit of \$100.00.
2. CSE is test optional; ACT and(or) SAT scores are not required but may be submitted;
3. TOEFL or IELTS (for international students/may be waived for some students);

4. Official transcripts submitted directly by the high school/college(s) attended, or an approved transcript processing agency (high school transcripts are not required for transfer students who have earned 24 or more transferrable college credits). The College also requires a personal interview with a college admission counselor as part of the application process. Once admitted an advisor will be assigned to assist in degree planning and course selection.

Admission Fee

CSE requires a \$100.00 Admission/Registration fee to confirm enrollment from admitted applicants planning to be degree-seeking students. The admission fee must accompany the Application Form. The admission fee is only refundable as stated in CSE's Refund Policies.

International Students

International applicants for first-time admission must demonstrate proficiency in English in one of the following ways: TOEFL (ibt) a score of 61, TOEFL (pbt) a score of 500, or IELTS, a score of 5.0 (4.5 if recommendations accompany the application certifying English speaking, reading, and writing skills) or by having had sufficient high school/college instruction in English.

Transfer Students- Previous College Experience/credits – CSE will accept all non-developmental courses passed at an accredited bachelor's degree-granting institution, provided the overall grade average for those courses is 2.0 or better. If the student's average is less than 2.0, all credit in courses in which grades earned were C or better will be accepted. Up to 24 credit hours of credit will be accepted through correspondence and/or extension courses. Transfer students must complete the general college requirements of CSE. An admitted student who was on academic probation at his/her last attended college prior to enrolling at CSE may begin on academic probation. CSE requires that all transfer credits be comparable in scope and content, applicable to the program into which transfer is requested and that competencies in the transferred courses be aligned with the program into which it is being transferred. Student Preparedness, age of the credit and the grade earned will also be scrutinized. A minimum of 25 percent of the credit required for any non-degree or undergraduate degree program must be obtained from CSE along with the required expeditionary courses required for each specific Degree Program. A minimum of 50 percent of the credit required to complete a graduate degree program must be obtained from CSE, along with the required expeditionary courses required for each specific Degree.

Transfer Admission Guarantee: CSE's Transfer Admission Guarantee (TAG) guarantees admission to qualified students from regionally accredited community colleges. Certain national and/or specialized accredited colleges also qualify for this guarantee. The Office of the Registrar maintains a list of qualified institutions. For institutions not on the list, the register will work with the faculty to determine if the institution can be qualified.

Meeting TAG eligibility requirements:

- Students are eligible for admission to CSE through TAG if they are a candidate for, or have earned an Associate of Arts (AA) or Associate of Science (AS) degree from a regionally (or qualified national or specialized) accredited community college.
- The application process requires that students submit the Admissions Application, and their official college transcript.
- Enroll at CSE following graduation from the community college before attending another college. Benefits of TAG to transfer students:
- No additional supporting documents are needed.
- CSE will only charge half the admission deposit (\$50.00) for TAG applicants when they commit to attend CSE.
- AA and AS meet the General Education Requirements at CSE.

Former CSE Students

A CSE student who for any reason misses more than one consecutive term must reapply for admission. Students academically suspended from CSE must wait until at least one term has passed before applying for readmission unless they receive special permission from the Dean of Academic Affairs. If admitted, the student will be placed on academic probation.

Non-Accredited Institutions Credits from established four or two-year national or international institutions that are not accredited by regional or national accrediting agencies will be evaluated on a case-by-case basis. An institution is non-accredited if it is not listed as a recognized accrediting agency by the US Department of Education.

Semester credits: CSE credits are semester credits. In transferring courses credited in quarter hours, the conversion formula is [semester credits] = $[(2/3) \times (\text{quarter credits})]$.

Vocational-Technical Credit

Credit from vocational-technical coursework, provided that the awarding school is approved by the state in which they are located, will be accepted on the basis that the vocational-technical credit will be equivalent to one-half of CSE credit and that each course accepted has a grade of C or better. A maximum of 30 credits of vocational-technical credit may be accepted by the CSE depending upon the credits and if applicable to the declared major. Vocational-technical credit will be listed on the student's permanent record with a grade of CR. In those cases where college-parallel courses (e.g., algebra, psychology, etc.) have been completed in a vocational-technical program the student may petition the appropriate CSE department for equivalent college credit. A copy of the course syllabus and texts used must accompany the petition. If equivalent credit is granted through this process, all other remaining credits will be transferred in at one-half of their value provided the grade received is a C or better up to a maximum of 30 vocational-technical credits and maximum of 60 credits overall. Credits for courses completed in vocational –technical programs will be accepted under any of the following conditions:

1. The course or program is listed in The National Guide to Recommendations for Non-Collegiate Courses, prepared by the American Council on Education;
2. The course or program is approved by the state in which it is located;
3. Credit has been accepted by other four-year and/or two-year accredited colleges and universities;
4. A special departmental examination given by CSE is successfully completed.

TUITION and FINANCIAL PLANNING

Tuition

Tuition includes the cost of instruction for all courses except student teaching and field study/expedition-based courses (These carry extra expenses for transportation, lodging, meals, etc.). Courses with individualized instruction or special equipment fees are listed below. (Costs listed are for the 2025-26 school year.)

Tuition for Undergraduate Full Time Students: (12 to 16 credit hours each term) \$395.00 credit hour

(12 credit hours x 395.00=4740.00 per semester 16 credit hours=6,320.00 per semester)

Total Tuition Cost per Year varies according to credit hour load and number of semesters attended.

Part-time tuition: 1-11 hrs. or over 17 hours \$395.00 per credit hour

Audit (for no credit) \$425.00 /credit hour

Tuition for Graduate Students/credit: \$425.00 per credit hour

Special Fees

- Admission/Registration Fee\$100.00(Non-refundable after the 3 Day Cancellation Period.)

Course Textbooks: Each professor will decide which texts they will use and assign them within the syllabus. The student will incur the costs to either purchase, rent or utilize E-books for their courses, when applicable. Costs will vary.

Equipment/Technology Devices: All equipment required for CSE courses will be provided by CSE. Computers are available to be utilized in the CSE Library and Media Center in Burge Hall, Rm 6. Any other specialty equipment or technological equipment needed by a student creating their own research projects, will be funded by the student.

- Credit by Examination (per credit hour).....\$75
- Graduation Fee – all Bachelor and Associate degrees (includes academic attire)\$200.00
- Experiential Portfolio Credits – 50% of the regular per credit hour tuition including any and all discounts
- Transcript of Record\$25 Addl fees apply for expedited & international transcript order.

Required Expedition Fees: \$150.00/day (Subject to annual changes). Minimum expedition 14 days=\$2200.00(airfare, food NOT included.) 3-week expeditions or longer are based on the same daily rate. Shorter expeditions may be required inside Arizona. These will be determined by the professors and disclosed BEFORE course registration.

Tuition Discounts will be awarded to Military Veterans and Active Military of the United States of America as follows:

Undergraduate full-time students: \$355.00/credit hour (12 or more hours)

Audit or Graduate Credits: \$380.00/credit hour

Billing & Payments

Payments of Accounts – Payments for tuition and all applicable fees must be made by three weeks before the first session of classes. Diplomas, transcripts, and grades will not be issued to students until their financial obligations are settled with the Student Accounts Office. The tuition, fees, and other charges described in this section are set for each academic year. They are subject to change from one academic year to the next as deemed necessary by CSE.

Student Financial Responsibility

Each student attending CSE assumes responsibility to pay all college-related expenses not covered by financial aid awarded by the college. Students who withdraw from the College must make arrangements to meet all outstanding financial obligations to the College. Examples of such obligations are tuition and fees, expedition and field study fees, etc. The student's transcript will not be released until satisfactory payment of all obligations have been made. Each graduating student/Senior must pay all remaining financial obligations to the College prior to graduation. A CSE diploma will not be awarded until this obligation is met.

Section 103 Compliance Policy

All students that have completed the CSE-VA Education Benefit Enrollment Form, submitted their COE and have been certified by the College, will not be restricted in any way for the first 90 days of a semester if the reason for the delay in making payments for the certified semester is due to a delay in receipt of benefits from the VA. This will include assessing late fees, placing restrictions or registration holds. After the 90 days, the College will treat each veteran on a case-by-case basis.

CSE Institutional Refund Policy

Refund of Institutional Aid

Return of unearned institutional financial aid program funds will be made in the following order:

- Any Institutional Grant or scholarship (limited by the total charges after refund calculation)
- Institutional Loans Refund of Military Benefits

Military benefit funds are awarded to a student under the assumption that the student will attend school for the entire period for which the assistance is awarded. When a student withdraws, the student may no longer be eligible for the full amount of military benefit funds originally awarded. CSE will return any unearned military benefit funds on a prorated basis through the period for which the funds were provided as per the U.S. Department of Veterans Affairs policies. Military benefit funds are earned proportionally during an enrollment period, with unearned funds returned to the respective program based upon when a student stops attending.

CSE Cancellation and Refund Policy

If for any reason an applicant is not accepted by the school, the applicant is entitled to a refund of all monies paid.

Three-Day Cancellation: An applicant who provides written notice of cancellation within three days (excluding Saturday, Sunday and federal and state holidays) of signing an enrollment agreement is entitled to a refund of all monies paid. No later than 30 days of receiving the notice of cancellation, the school shall provide the 100% refund.

Other Cancellations: An applicant requesting cancellation more than three days after signing an enrollment agreement and making an initial payment, but prior to entering the school, is entitled to a refund of all monies paid, minus the admission/registration fee of \$100.00.

CSE Refund after the commencement of classes:

1. Procedure for withdrawal/withdrawal date:
 - a. A student choosing to withdraw from the school after the commencement of classes is to provide written notice to the Dean of Student Affairs. The notice is to indicate the expected last date of attendance and be signed and dated by the student.
 - b. For a student who is on authorized Leave of Absence, the withdraw date is the date the student was scheduled to return from the Leave and failed to do so.
 - c. Use the last date of attendance as the date of withdrawal or termination to determine the percentage of time in the program that expired.
 - d. Determine that a student has withdrawn from CSE, if the student has not attended any class for 4 consecutive scheduled class days.
 - e. All refunds will be issued within 30 days of the determination of the withdrawal date.
2. Tuition charges/refunds:
 - a. Before beginning of classes, the student is entitled to a refund of 100% of the tuition, minus the admission/registration fee of \$100.00 if after the 3 Day Cancellation period.
 - b. After the commencement of classes, the tuition refund, minus the admission/registration fee of \$100.00 will be determined as follows:

Student Initial _____
3. If 10 percent or less of the semester used has expired, a refund of at least 90 percent of the tuition charges for the semester will be refunded;
4. If more than 10 percent but less than or equal to 20 percent of the semester used has expired, a refund of at least 80 percent of the tuition charges for the semester will be refunded;
5. If more than 20 percent but less than or equal to 30 percent of the semester used has expired, a refund of at least 70 percent of the tuition charges for the semester will be refunded;
6. If more than 30 percent but less than or equal to 40 percent of the semester used has expired, a refund of at least 60 percent of the tuition charges for the semester will be refunded;

7. If more than 40 percent but less than or equal to 50 percent of the semester used has expired, a refund of at least 50 percent of the tuition charges for the semester will be refunded; and
8. If more than 50 percent of the semester used has expired, no refund will be allowed.

The percentage of the semester used is determined by the number of class days scheduled per semester, from the student's start date to the student's last day of attendance, by the total number of scheduled class days in the semester.

Any books, supplies and fees REQUIRED by the program will be refunded IF the student has not attended any class and withdrew before the first class and purchased these items from the CSE Bookstore (Receipt is required for a refund.). Otherwise, no refunds for any of these will be issued, once a student has attended a class.

Refunds will be issued within 30 days of the date of student notification, or date of school determination (withdrawn due to absences or other criteria specified in the CSE Academic Catalog and or the CSE Student Handbook), or in the case of a student not returning from an authorized Leave of Absence (LOA), within 30 calendar days of the date the student was scheduled to return from the LOA and did not return.

Personal Property Insurance

Personal property insurance is the responsibility of students or their families. The College of Science and Education does not insure against loss of personal items.

Health and Accident Insurance

Health and accident insurance is suggested for each student taking 12 or more credit hours. Health and Accident Insurance is required for all international students. The insurance rate for international students is based on a different scale than for domestic students. Exemption from this coverage: A student, if of legal age, may sign a waiver; otherwise, a parent or guardian must sign it. Waivers must be filed with the office of the Medical Coordinator.

Financial Assistance

Application

All applications for scholarships, grants, loans and campus employment must be made each year. New students may secure application forms from the Office of Student Financial Planning or the Admissions Office. The Application for Student Aid is the form required by CSE for determining a student's eligibility for financial assistance. Financial need is defined as the difference between the cost of attending CSE and the expected family and/or student contribution. CSE makes available to students, financial assistance in the form of grants, scholarships, work-study and employment. Although applications for financial assistance may be submitted at any time, earlier applications will receive priority in case of limited fund availability. Institutional financial aid is normally available for a maximum of five academic years commencing with the first term the student enrolls at CSE as a full-time student. Scholarships, grants, Work-Study, loans and student employment will be given on the basis of:

- scholarship, in accordance with the established standard for the award
- need, to the extent that the student could not otherwise attend college
- registration for no fewer than 12 credit hours per term for institutional scholarships and grants

Satisfactory Academic Progress Policy for Financial Aid Undergraduate Students

Students attending full-time have a maximum of six academic years to complete a program of study at CSE. Part-time students have a maximum of twelve academic years to complete a program. Academic progress will be measured both qualitative and quantitative. A minimum grade point average and a minimum number of credit hours completed in an academic year are requirements. Both of these standards are designed to ensure a student keeps on schedule and completes within the prescribed program time, and not to exceed more than 150% of the program length. The quantitative pace will

be measured by dividing the cumulative number of hours successfully completed by cumulative number of hours attempted by the student. Generally, to complete within 150% the student should not have a pace below 67%.

The following qualitative measure at the end of each term indicates the required minimum cumulative grade point average required to receive financial aid:

Full-Time Part-Time Term GPA

<u>Full-Time</u>		<u>Part-Time</u>	
<u>Term</u>	<u>GPA ...</u>	<u>Term</u>	<u>GPA...</u>
1	1.6	1 & 2	1.6
2	1.8	3 & 4	1.8
3	1.9	5 & 6	1.9
4	2.0	7 & 8	2.0
5-8	2.0	9 & 10	2.0
		11 thru 20	2.0

Transfer students will enter the time frame at the point according to the number of credits earned and accepted by CSE for prior education at other institutions. For quantitative measure, full-time students must complete 12 credit hours minimum each term, at the full-time level as indicated in the following chart.

Students enrolled part-time in a term (6 to 11 credit hours per term) must complete the minimum prorated credit hours per term. The following measure will be used to determine minimum quantitative progress:

Credit Hours Required

<u>Term</u>	<u>Full-Time</u>	<u>Part-Time.....</u>
1	12	Prorated
2	24	Prorated
3	36	Prorated
4	48	Prorated
5	60	Prorated
6	72	Prorated
7	84	Prorated
8	96	Prorated
9	108	Prorated
10	120	Prorated

All "A" through "F" grades or "P" for passing with credit which have been accepted by the Registrar will be considered as credits earned and completed for qualitative progress analysis. All "W", "I", AU (audit) will not be considered credits completed toward qualitative or quantitative satisfactory academic progress. If a student repeats a course because he or she failed it in a previous term, or because the student wishes to improve a grade in a course, the credits may be included in the total number of credits when determining enrollment status. If a student withdraws from a course or fails a course, and takes it the next term, the course will be counted toward enrollment status for that next term. If a student falls below the required qualitative financial aid standards for maintaining satisfactory academic progress, the student will be placed on financial aid warning for the following term during which the student will continue to receive financial aid. If at the end of the warning period the appropriate minimum cumulative grade point average is not achieved, all financial aid will be subject to termination. If the student does not successfully complete the required quantitative hours for a term, the student will be placed on financial aid warning for the following term during which the student will continue to receive financial aid. If at the end of the warning period the student has not completed the appropriate minimum number of credit hours per policy, the student's financial aid will be subject to termination.

The student then has the right to appeal the suspension of financial aid by indicating in writing to the Dean of Student Affairs:

A. the reasons regarding failure in maintaining satisfactory academic progress (for example the death of a relative, an injury or illness of the student, or other special circumstances)

B. what has changed that will allow the student to meet the standards at the next evaluation and why financial aid should not be terminated.

The letter will be presented to the Financial Aid Committee for decision. Any decision by the committee will be final. If the Financial Aid Committee votes to reinstate the student based on the appeal, the student will be reinstated on financial aid probation for one academic term. After the probationary term, the student must be making SAP or must be successfully following an academic plan. A student whose financial aid is terminated may not be reinstated until after one academic term has expired.

When to Apply for Aid

Although applications for financial assistance may be submitted at any time, earlier applications will receive priority in case of limited fund availability. Contact the Office of Student Affairs for current year deadlines. Students must reapply for aid each year. Reapplication priority deadline is April 1 for the subsequent academic year. Requirements for renewal of financial aid are subject to change each year. Financial aid changes may be made if a discrepancy is found between an applicant's "statement of need" and his or her current financial status. If a student withdraws within a term, aid will be adjusted in accordance with the refund policies for tuition, and other costs.

Sources of Financial Aid

Grants & Scholarships Grants and scholarships are gifts which do not have to be repaid. Sources include CSE, state governments, and other private grant and scholarship organizations.

PRIVATE ALTERNATIVE LOAN PROGRAMS

Students and families who do not have the resources to pay for college beyond the amount received from grants, scholarships, work-study and federal loan programs, can look to other types of educational loan programs. Most lenders participate in and offer private educational loan programs at very competitive terms and interest rates. Contact the Office of Student Financial Planning or the Admission Office for further information and details.

STUDENT EMPLOYMENT OPPORTUNITIES

CSE has a College Work-Study Program. Eligibility for this program depends upon the need for employment to meet college costs. Students must file a Work-Study form to determine their eligibility for the work-study program. Students may work in on-campus jobs. Application for employment under this program is made in the Office of Student Financial Planning.

College of Science & Education Scholarships: Students who graduated from CSE's Education Lab School-Country Gardens Charter School, may be eligible for Tuition scholarships. These are based on GPA, expeditions and extra-curricular engagement, leadership and citizenship. Application deadlines are June 15th of each year.

Students who attended Country Gardens Charter School since Kindergarten through completion of 12th grade with a High School GPA of at least 3.0, and have attended at least one 5th-12th grade US expedition and attended both Costa Rica and Belize expeditions will be eligible for the "Jaguars" Scholarship. First year at CSE will have all tuition paid for- up to 30 credits, maintaining a 3.0 GPA in all courses to continue after each semester. (No more than ten per semester.) If the GPA drops below 3.0, the scholarship tuition funds will NOT be renewed the following semester. Re-application for continuing years beyond 30 credits, will be required. Continuation will be competitively-based.

Sexual Misconduct Policy

The College of Science and Education is committed to providing a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free of discrimination on the basis of sex; which includes all forms of sexual misconduct. Sexual misconduct violates an individual's fundamental rights and personal dignity. CSE considers sexual misconduct in all its forms to be a serious offense. This policy refers to all forms of sexual misconduct, including but not limited to: sexual discrimination, sexual harassment, sexual assault, and sexual violence by employees, students, or third parties. CSE does not discriminate on the basis of race, color, creed, age, gender, sexual orientation, religion, national origin, veteran status, physical or mental disability, genetic information, or any other basis of prohibited discrimination in its programs and activities. This policy extends to employment with and admission to the College. Please refer to the College's Sexual Misconduct Policy: Title IX Policy.

Grievance Procedure

Student Grievance Procedure: Should a student have a complaint with CSE, then the following steps shall be taken by him/her:

1. Student shall first attempt to address the grievance with the instructor or applicable staff member and try to resolve it. If unsuccessful, proceed to the written grievance procedure.
2. Student may state the grievance in writing to the Dean of Student Affairs or other designee. Dean of Student Affairs or designee, shall have ten (10) business days in which to investigate and address the grievance.
3. Should the Dean of Student Affairs or designee fail to or unacceptably address the grievance, the student may appeal in writing to the Office of the College President. The appeal must be in writing, include new information that may have a bearing on the grievance, and be submitted within 10 days of the date of the first determination. The Office of the College President will have 15 days to investigate the new information and will mail or email the final answer to the student.

If the Student complaint cannot be resolved after exhausting the institution's grievance procedure, the student may file a complaint with the Arizona State Board for Private Postsecondary Education. The student must contact the State Board for further details.

4. Any and all grievances must be filed within two weeks of the occurrence, or they will not be addressed.

The State Board Address is:

Arizona State Board for Private Postsecondary Education
1740 W Washington St
Phoenix, AZ 85007
602-542-5709
Website: <http://ppse.az.gov>

STUDENT SERVICES (Check Student Affairs Office for these services.)

- * Admissions & Registrar's Office (The Admissions Office is located in the lobby of CSE.)
- * Disability Accommodations
- * Subject Tutoring
- * Testing Services
- * Degree/Course Planning and Counseling

*Alumni Connections: Offers the following services to students:

* Employment opportunities: Graduate

* Networking

* Internship Opportunities

* Alumni events

* Campus Christian Ministry

Student Handbook Information

The College of Science & Education Student Handbook contains information in addition to the contents of this catalog. Please refer to the Student Handbook for additional information on policies and procedures.

Academic Integrity

Class Attendance

FERPA (Family Educational Rights and Privacy Act)

Access To Student Records

Electronic Devices in the Classroom

Grievance Procedures

Recreational Gym Usage

Pet Policy

Unauthorized Entry

Vandalism

Vending Machines

Safety and Security

Student Services

Campus Christian Ministry

CSE Bookstore & Gift Shop

Copying & Scanning Services

Financing

Health Insurance

Identification Cards

International Student Services & Study Abroad

CSE Library & Media Center

Lost and Found

Registrar's Office

Student Accounts Office

Student Employment/Work Study

Technology & Policies

Campus Map-See Attachment(CSE-Campus maps)

Additional University Policies

Aids Policy

Alcohol

Mass Email and Unsolicited Email

Media Relations and University Publications

Parking & Motor Vehicle Policies

Posting Policy

Sexual Misconduct (Title IX)
Social Media Policy
Students With Disabilities
Student Conduct Process
Student Conduct Structure
Parent/Legal Guardian Notification Policy
Sexual Misconduct Policy
Virtues and Ethics Violations
 * Academic Dishonesty
 * Identity Fraud
Virtues & Ethics: #1-4
Contact Information

College of Science and Education Academic Calendar 2025-2026

Semester		Date
Early Fall Semester 1	First Day of classes begin	8/4/2025
	Drop/Add classes deadline	8/11-15
	Holiday no classes	9/1
	Last day of classes-Sem 1	9/29
Fall Semester 2	First Day of classes begin	10/14/2025
	Drop/Add classes deadline	10/21-27
	Holiday no classes-Veteran's Day	11/10-11
	Holiday no classes-Thanksgiving	11/26-28
	Last day of classes-Sem 2	12/15
Winter Semester 3	First Day of classes begin	1/5/2026
	Drop/Add classes deadline	1/12-16
	Holiday no classes-MLK Day	1/19
	Holiday no classes-Presidents Day	2/16
	Last day of classes-Sem 3(Only Monday classes must attend 3/2 and 3/3)	3/3/26
Spring Semester 4	First Day of classes begin	3/16/2026
	Drop/Add classes deadline	3/23-27
	Holiday no classes-Good Friday	4/3
	Last day of classes-Sem 4(Only Friday classes must attend 5/11)	5/11
	Graduation Ceremony-evening	5/22
Summer Semester 5	First Day of classes begin	6/01/2026
	Drop/Add classes deadline	6/8-12
	Holiday no classes-Juneteenth	6/19
	Holiday no classes-Independence Day	7/03
	Last day of classes-Sem 4(Only Friday classes must attend 7/13 and 14)	7/14

College of Science and Education Admissions Application

page 1/2

Student Name _____ Date _____

Address _____

City _____ State _____ Zip _____

Phone: _____ Cell: _____

Date of Birth: _____ Male _____ Female _____

Ethnicity(optional): _____ Hispanic _____ African/American _____ White _____ Hawaiian/Pacific Islander

_____ Native American _____ Asian _____ Other

Complete the following:

1. Attach High School or college transcripts to this application. Your application cannot be processed without these.
2. Military Verification Documents for the Military Discount must be attached to the application, if applicable.
3. Attach 3 references that are from persons of a supervisory nature, which you have been employed by or instructors that are from classes you have taken.
4. Schedule an interview with the CSE Student Affairs Office: Date _____
5. Include a check for the Admission/Registration fee of \$100.00 (This is NON-REFUNDABLE after the 3 Day Cancellation period.)

High School Graduation Date: _____

School: _____

College Graduation Date: _____

College/University: _____

College Program Applying for-Circle One: Natural Sciences Education Interdisciplinary History

Degree Program applying for: _____

Emphasis Area: _____

Degree Level Applying for: Circle one

Associates Degree Bachelor's Degree Master's Degree Graduate Certificate Auditing Coursework

Projected graduation Date: _____

Projected Credit hours per semester: _____

Proposed Semesters attending: ___ 1 ___ 2 ___ 3 ___ 4 ___ 5a ___ 5b ___ 5c ___ (See Summer Semesters below)

Class start times 5a: 8 or 9 am 5b: 12:30pm 5c: varies (4 or 5 pm depending on the number of credits)

If accepted into the College of Science and Education, I understand I will be required to complete and sign an Enrollment Agreement Contract before registering for classes.

As posted in the Academic catalog and stated here, I agree to pay the tuition of: (circle one)

\$395.00 per credit hour for all Undergraduate credits

\$425.00 per credit hour for all Graduate and/or Audited credits

If I am verified to have been certified as a Military/Veteran personnel, of a branch of the United States Military, I understand it will afford me the Military tuition discounts as follows: \$355.00 per credit hour for all Undergraduate credits and \$380.00 per credit hour for all Graduate or Audited credits. (The maximum of 50% discount for all Experiential Learning Portfolio credits will apply to these rates for Military Discounts.)

I understand that all tuition MUST be paid in advance of the start of the first class session, unless prior documentation of any financial aid or scholarship funds for tuition credit are verified and are in process of being sent or processed to the College of Science and Education.

Extra costs/fees for expeditions traveling in the US and abroad will be specifically displayed next to the expedition for each semester when being offered in the Academic Course Calendar. These travel costs change according to the economy and therefore are only fixed by semester dates. My planned Expeditions for this calendar year of _____ are for the following expeditions: _____

I understand the costs for these expeditions (Not including airfare, food), as per the current Academic Calendar are: _____.

(Note: These can change without notice and CSE reserves the right to add any additional charges to these expeditions as necessary. These additions, if any, will be relayed to students BEFORE the expedition, so they will have the option of dropping the course by the DROP/ADD periods listed.)

I understand all airfare ticketing and costs will be my responsibility to attend any and all expeditions which require air travel.

I understand all expeditions out of the USA will require a passport and it will be my responsibility to acquire the passport, at my cost.

Student Signature: _____ Date: _____

Official CSE Data:

Received: __ transcripts __ Referenced __ Military Documentation __ Scholarship Documentation __ Interview

__ accepted Date: _____

__ not accepted **Missing:** __ transcripts __ References __ Interview __ other _____

Deficient

Academics: _____

College of Science and Education Official

Signature: _____ Date: _____

Letter of Acceptance/Denial sent on: _____