

# ED-SEC ED MATHEMATICS-BA

## Program Overview

### Bachelor of Arts - Secondary Education - Mathematics and ELAD Endorsement

#### Nevada Department of Education Licensure Requirements

According to the Nevada Revised Statutes, all teaching licenses in Nevada are granted by the Nevada State Board of Education.

All Teacher Education Program students must meet the Nevada Department of Education requirements in order to be licensed.

#### General Education Requirements

##### Written Communications (one course required)

**ENG 100      Composition-Enhanced      5 Credits**

Allows students to fulfill their first semester of English while completing the remediation process. Designed for students who did not place into ENG 101 on the placement test/writing sample, but did not score so low that they need ENG 95. Allows a student to refine specific skill deficiencies while completing the first semester of freshman composition (ENG 100 is equivalent to ENG 101). Students will have additional Academic Success Center requirements. Although it is a five-credit course, it does not replace ENG 102. After successful completion of ENG 100, a student must take ENG 102 to complete the general education requirement.

**ENG 101      Composition I      3 Credits**

Critical reading and writing of the expository essay. Emphasizes pre-writing, strategies for organization, and revision.

##### Evidence-Based Communications

**ENG 102      Composition II      3 Credits**

Continuation of English 101. Emphasizes writing from sources, argument, the investigative paper, and research techniques.

##### Science (one course required)

**BIOL 190      Intro Cell/Molecular Biology      4 Credits**

Structure and function of cells. Major molecules of life; composition and physiology of cellular organelles; cell metabolism, reproduction, motility, and gene function of both plant and animal cells. Required for biology majors. Concurrent enrollment in a corresponding lab section is required for this course.

**CHEM 121      General Chemistry I      4 Credits**

Fundamentals of chemistry including reaction stoichiometry, atomic structure, chemical bonding, molecular structure, states of matter, and thermochemistry.

**GEOL 101      Exploring Planet Earth      3-4 Credits**

Fundamental principles of geology including tectonic and surficial processes, oceans, atmosphere, environmental applications, and resources. Includes a laboratory component.

**PHYS 151      Gen Physics I      4 Credits**

Primarily for students in arts and science. Topics include kinematics, energy and momentum conservation, rotational dynamics, thermodynamics, fluids, harmonic motion, and sound. Laboratory experiments illustrate many of these fundamental principles.

##### Additional Science (one course required)

**ANTH 102      Physical Anthropology      3 Credits**

Introduction to the study of how humans, Homo sapiens, have emerged as a species and come to dominate the planet by examining processes of human biological and cultural evolution. Topics include inheritance, the emergence of primates, fossil hominids, the development of technology, and biological variability among modern humans. Satisfies general education science.

**AST 101      General Astronomy      3 Credits**

An introductory examination of the solar system, stellar systems, and stellar and galactic evolution according to currently accepted concepts. Introduces astronomical instruments and light theory.

**BIOL 100      General Biology/Non Major      3 Credits**

Basic biological concepts, interpretation and application of scientific methods, and effects of biological advances on society. Core curriculum science course; cannot be used for credit toward field of concentration in biology.

**BIOL 190      Intro Cell/Molecular Biology      4 Credits**

Structure and function of cells. Major molecules of life; composition and physiology of cellular organelles; cell metabolism, reproduction, motility, and gene function of both plant and animal cells. Required for biology majors. Concurrent enrollment in a corresponding lab section is required for this course.

**CHEM 100      Molecules/Life Modrn Wrld      3 Credits**  
Introduction to chemistry in its many forms and applications, physical and organic, with consideration of environmental and social issues. Includes laboratory activities.

**CHEM 121      General Chemistry I      4 Credits**  
Fundamentals of chemistry including reaction stoichiometry, atomic structure, chemical bonding, molecular structure, states of matter, and thermochemistry.

**ENV 100      Humans and the Environment      3 Credits**  
Introduction to the relationship of man and his environment. Current thinking and research concerning the impact of industrialization and urbanization on environmental quality, including the population explosion; the potential decline of the affluent society by the depletion of natural resources; the pollution of air, land surface, and water; and the public agencies and policies designed to solve environmental problems.

**GEOG 103      Physical Geog Earth Environmnt      3 Credits**  
Physical elements of the earth's natural features and their significance to man. Topics include earth form and motion, landforms, weather, climate, vegetation, and soils. Four laboratory experiences required.

**GEOL 101      Exploring Planet Earth      3-4 Credits**  
Fundamental principles of geology including tectonic and surficial processes, oceans, atmosphere, environmental applications, and resources. Includes a laboratory component.

**NUTR 121      Human Nutrition      3 Credits**  
An introductory nutrition course for the beginning student. Course will center on the major nutrients and their roles in maintaining good health. Students will learn to recognize well-balanced diets and acquire shopping tips and preparation techniques for optimum utilization of food dollars. Class includes four required labs.

**PHYS 100      Introductory Physics      3 Credits**  
A concise treatment of the basic principles of physics. Includes mechanics, matter, electricity, magnetism, heat, sound, light, relativity, and nuclear physics.

**PHYS 151      Gen Physics I      4 Credits**  
Primarily for students in arts and science. Topics include kinematics, energy and momentum conservation, rotational dynamics, thermodynamics, fluids, harmonic motion, and sound. Laboratory experiments illustrate many of these fundamental principles.

**Humanities (one course required)**

**ART 160      Art Appreciation      3 Credits**  
Introduction to the visual arts, illustrating the place of art in its social and cultural setting.

**ENG 203      Intro to Literary Study      3 Credits**  
Introduction to the elements of fiction, poetry, and drama used in the analysis of literature.

**ENG 223      Themes of Literature      3 Credits**  
Themes and ideas significant in literature.

**FIS 100      Introduction to Film      3 Credits**  
Introduction to the historical development of film as art. Considers the development of cinematic techniques (i.e., cinematography, editing, sound, etc.), cinematic genres (i.e., the western, romantic comedy, etc.) and narrative elements (i.e., plot, character, conflict, etc.) as exemplified by the work of major American and international directors.

**FREN 111      First Year French I      3-4 Credits**  
Development of language skills through practice in listening, speaking, reading, writing, and structural analysis. Language practice required.

**FREN 112      First Year French II      3-4 Credits**  
A continuation of FREN 111. Language practice required.

**HIST 208      World History I      3 Credits**  
Survey of world civilizations to 1600. Examines societies, cultures, and issues relative to Africa, the Americas, Asia, Europe, the Middle East and Oceania.

**HIST 209      World History II      3 Credits**  
Survey of world civilizations since 1600. Examines historical societies, cultures, and issues relative to Africa, the Americas, Asia, Europe, the Middle East, and Oceania.

**HUM 101      Intro to Humanities I      3 Credits**  
An introduction to humanities through a study of seven major arts including film, drama, music, literature, painting, sculpture, and architecture. Each of these arts is considered from the perspective of historical development, the elements used in creating works of art, meaning and form, and criticism and critical evaluation.

**HUM 210      Communicating Diversity      3 Credits**  
Communicating Diversity is a lower division course designed to familiarize students with the fundamentals of diversity and how those are expressed through communication. Students will develop a deep understanding of the way in which we communicate race, gender, class, sexual orientation, nationality, religion, and physical/mental ability and how it impacts our daily lives. This course will take an intersectional approach to understanding diversity and seek communication strategies for inclusivity. Emphasis will be placed on defining and developing the critical thinking skills necessary to push past oppression, marginalization, and other issues centralized around diverse populations. Students will be encouraged to investigate and discover diversity issues, solutions, and concepts at the local and global level using case studies, current events, and other significant moments in history.

<b>MUS 121</b>	<b>Music Appreciation</b>	<b>3 Credits</b>
The historical and cultural background of music and origins to the twentieth century.		
<b>PHIL 101</b>	<b>Intro to Philosophy</b>	<b>3 Credits</b>
Basic problems in different areas of philosophy such as ethics, political theory, metaphysics, and epistemology.		
<b>PHIL 102</b>	<b>Critical Thinking</b>	<b>3 Credits</b>
Covers non-symbolic introduction to logical thinking in everyday life, law, politics, science, advertising; common fallacies; and the uses of language, including techniques of persuasion.		
<b>PHIL 135</b>	<b>Introduction to Ethics</b>	<b>3 Credits</b>
Introduction to Ethics: critical introduction to classical and modern ethical theories such as utilitarianism, deontology, and virtue ethics. Emphasis throughout on applying the theories in various contexts such as social, political, or interpersonal. The ultimate goal will be to allow students to clarify their own thinking and positions on important ethical issues confronting society today.		
<b>SPAN 111</b>	<b>First Year Spanish I</b>	<b>3 Credits</b>
Development of language skills through practice in listening, speaking, reading, writing, and structural analysis. Language practice required.		
<b>SPAN 112</b>	<b>First Yr Spanish II</b>	<b>3 Credits</b>
A continuation of SPAN 111. Language practice required.		
<b>SPAN 211</b>	<b>Second Year Spanish I</b>	<b>3 Credits</b>
Considers structural review, conversation and writing, and readings in modern literature.		
<b>Fine Arts (one course required)</b>		
<b>ART 100</b>	<b>Visual Foundations</b>	<b>3 Credits</b>
A beginning art class that includes a survey of art and the basic components of design. The class explores visual concepts as they relate to the history of art through class presentations, discussions, and a variety of media. Students should plan for three hours of studio work outside the class.		
<b>ART 101</b>	<b>Drawing I</b>	<b>3 Credits</b>
A disciplined foundation in drawing concepts based on visual observation skills.		
<b>ART 107</b>	<b>Design Fundmntls I (2-D)</b>	<b>3 Credits</b>
Explores the fundamentals of design using various media focusing on 2-D design.		
<b>ENG 205</b>	<b>Intro to Creative Writing</b>	<b>3 Credits</b>
A creative writing course designed to introduce students to the production of fiction and poetry.		
<b>MUS 101</b>	<b>Music Fundamentals</b>	<b>3 Credits</b>
Notation, terminology, intervals, and scales. Designed to furnish a foundation for musicianship. Recommended for teachers in public schools and all others desiring a basic music background.		
<b>THTR 100</b>	<b>Introduction to Theatre</b>	<b>3 Credits</b>
A survey of the basic principles, facts, and theories providing an understanding of the art of theatre. Course also includes a special focus on the practical technical aspects of the theatre and on live theatre experiences.		
<b>THTR 105</b>	<b>Introduction to Acting I</b>	<b>3 Credits</b>
Examines acting fundamentals and focuses on development of vocal, physical, and creative tools to be used on stage.		
<b>THTR 121</b>	<b>Stage Makeup</b>	<b>3 Credits</b>
This course focuses on the history of makeup and basic approaches to applying make-up for the stage and screen. Make-up supplies will be studied, as well as techniques for corrective, old-age, character, stylized, and special effects makeup.		
<b>THTR 204</b>	<b>Theatre Technology I</b>	<b>3 Credits</b>
Lecture and discussion encompassing the philosophy and techniques of technical theatre.		
<b>WELD 200</b>	<b>Metal Art</b>	<b>3 Credits</b>
This course is designed to give the student the basic understanding of two dimensional 2D and three-dimensional 3D metal art. Also covered in this course we will discuss different Cutting, Welding and metal finishing techniques that are used in this discipline as it relates to metal art.		
<b>U.S. and Nevada Constitutions:</b> HIST 101 and 102 or PSC 101		
<b>HIST 101</b>	<b>U.S. History to 1877</b>	<b>3 Credits</b>
Survey of U.S. political, social, economic, diplomatic, and cultural development from colonial times through Reconstruction. When taken with HIST 102 satisfies the GBC General Education American Constitutions and Institutions Requirement. HIST 101 and 102 need not be taken sequentially. Either class may be taken alone.		
<b>HIST 102</b>	<b>U.S. History Since 1877</b>	<b>3 Credits</b>
Survey of U.S. political, social, economic, diplomatic, and cultural development from 1877 to the present. Course satisfies the Nevada Constitution Requirement. When taken with HIST 101 satisfies the GBC General Education American Constitutions and Institutions Requirement. Can be used to satisfy		



**Upper-Division Secondary Education Core Requirements****EDRL 471 Theory/Pract Acad Eng Lang Dev 3 Credits**

This course addresses first and second language acquisition; language development universals and differences; English language structure and its particular challenges for the learner of a new language; English phonology (sounds), morphology (word formation), syntax (sentence formation), semantics (word meaning), and pragmatics (word choice); grammatical instruction and error analysis; and the writing process for English Language Learners. The course will also include the role of culture in language acquisition, evidence based practices for academic ELD, and approaches and models of instruction.

**EDRL 474 Method/Curr Tch Eng Lang Learn 3 Credits**

Provides systematic instruction to help ELL students (1) adjust to school; (2) acquire English for self-help and for extended interaction; and (3) develop English for extended learning. This course includes an analysis of standard second language tests for diagnosis, placement, and teaching of ELL students using WIDA standards and research-based practices.

**EDRL 475 Assess/Eval Eng Lang Learner 3 Credits**

Includes an analysis of standard second language tests and development and evaluation of teacher-generated instruments for placement, diagnosis, and teaching second language learners.

**EDRL 477 Plcy,Iss,BstPrac ELL-Practicum 3 Credits**

This three-credit course will aim to familiarize students with historical and current issues and cultivate students' skill in the design and implementation of instruction and assessment for English Learners (ELs). Students will be expected to demonstrate their in-depth understanding of academic literacy for ELs through practicum experiences.

**EDSC 311 Secndry Methd/Practicum I 1-3 Credits**

First in a sequence of field and clinical experience courses in a secondary classroom. Students work in middle-level or high school classrooms to develop skills working with students and implementing instructional plans. Students will spend approximately 15 hours observing in the public schools. Class may be repeated up to a total of three credits. [S/U]

**EDSC 313 Secndry Methd/Practicum II 1-3 Credits**

Second in a sequence of field and clinical experience courses in a secondary classroom. Students will observe approximately 25 hours of the middle-level or high school classrooms. The portfolio and admission process is explained. Class may be repeated up to a total of three credits. [S/U]

**EDSC 315 Secndry Methd/Practicum III 1-3 Credits**

The third and final course in a sequence of field and clinical experience courses. Students will spend 30-60 hours at the middle-level or high school classroom. Students will be expected to work toward completion of the requirements for their portfolio project. Taken in conjunction with content area methods course. Class may be repeated up to a total of three credits. [S/U]

**EDSC 453 Teaching Secondary Math 3 Credits**

Course examines the methods, materials, teaching techniques, and strategies unique to mathematics education. Emphasis is placed on the pre-algebra, algebra, and geometry curriculum; classroom organization; test construction and evaluation; use of audio-visual materials and equipment.

**EDSC 483 Secnd Suprvsd Tch Intnshp 1-16 Credits**

The Supervised Internship provides the student with the opportunity to experience, in depth, the full role and meaning of teaching in a school setting. Experiences include planning and organizing for instruction, developing classroom teaching competencies and skills, evaluating pupil progress, participating in extracurricular activities, working with special school personnel, and utilizing school and community resources in the instructional program.

**EDSC 491 Sec Ed Capstone Seminar 3 Credits**

Addresses ethical, professional, and substantive issues in the teaching profession. This course forms the bridge between theory and practice where teaching skills can be analyzed, discussed, and refined; and professional competency can be assessed and achieved through professional collaboration and reflective practice.

**EDSP 301 Education Excptl Child 3 Credits**

A survey of the special education area for majors and non-majors, designed to acquaint the student with the special needs of learners categorized under all areas of exceptionality. Introduces methods for identifying, planning, and working effectively with exceptional children in the regular classroom. Emphasis on etiology, physical, and educational characteristics. The pre-service teacher is taught to recognize and refer exceptional learners for assessment, as well as design and implement individualized programs, instructional strategies, and classroom management strategies.

**EDUC 323 Curriculum Design/Family Engage 3 Credits**

Includes planning for family engagement including families from diverse backgrounds in learning-centered environments, preparing lesson plans, preparing a professional portfolio, and understanding the Nevada Academic Core Standards.

**EDUC 406 Curriclm/Assess Education 3 Credits**

Course covers the range of assessments used in elementary schools. Students learn to administer and interpret standardized or norm referenced tests, create appropriate criterion-referenced assessments, portfolios, performance tasks with data-collection, and record-keeping strategies for reporting student academic progress. Nevada Curriculum Standards and state testing instruments will be studied.

**EPY 330 Principles of Educ Psychology 3 Credits**

General principles, theories, and recent research evidence regarding human development, human learning, and human motivation, especially as they pertain to classroom instruction.

**Mastery Course Requirement**

One course required

**INT 369 Integrative Science Seminar 3 Credits**

An integrative seminar on topics in science. The topics will vary to address needs and interests of programs. Course fulfills the upper-division integrative science general education requirements. May be repeated once for credit if the topics are different.

**GEOL 335 Earth Resources/Environment 3 Credits**

Geological availability, exploitation, and use of nonrenewable natural resources including metallic minerals, nonmetallic, and energy resources.

**Content-Area Requirements****Technology****CS 135 Computer Science I 3 Credits**

This course is an introduction to modern problem solving and programming methods. Emphasis is placed on algorithm development. A special focus will be on procedural and data abstraction, emphasizing design, testing, and documentation.

**Calculus and Discrete Mathematics****MATH 181 Calculus I 4 Credits**

The fundamental concepts of analytic geometry and calculus functions, graphs, limits, derivatives, integrals, and certain applications. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 182 Calculus II 4 Credits**

A continuation of MATH 181. The course covers transcendental functions, methods of integration, conic sections, infinite sequences and series, and first-order differential equations. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 251 Discrete Mathematics I 3 Credits**

Topics include set operations, Cartesian product relations and functions, equivalence relation, graphs and digraphs, propositional calculus, truth tables, mathematical induction, and elementary combinatorics. Applications are made to probability. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 283 Calculus III 4 Credits**

A continuation of MATH 182. Topics include vectors, differentiation and integration of vector-valued functions, the calculus of functions of several variables, multiple integrals and applications, line and surface integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**Statistics****STAT 152 Intro to Statistics 3 Credits**

Includes descriptive statistics, probability models, random variables, statistical estimation and hypothesis testing, linear regression analysis, and other topics. Designed to show the dependence of statistics on probability. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**Lower-Division Mathematics (one course required)****MATH 126 Precalculus I 3 Credits**

A third course in algebra that stresses polynomial, quadratic, rational, exponential, and logarithmic functions, including their graphs and applications; complex numbers; systems of equations; and basic operations with matrices and determinants, including Cramer's rule. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 126E Precalculus I Expanded 3 Credits**

Precalculus I Expanded with Co-requisite support: Includes equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 127 Precalculus II 3 Credits**

Topics include circular functions, their graphs, and applications; trigonometric identities and equations; conic sections; vectors; sequences and mathematical induction. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 128 Precalculus and Trigonometry 5 Credits**

Topics include equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**Upper-Division Mathematics****MATH 330 Linear Algebra 3 Credits**

An introduction to linear algebra, including matrices and linear transformations, eigenvalues, and eigenvectors. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 331 Groups/Rings/Fields****3 Credits**

Elementary structure of groups, rings, and fields, including homeomorphisms, normal subgroups, and ideals. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 333 Number Theory for Sec Ed****3 Credits**

Examines in detail the structure of number systems and polynomials over these number systems, and teaches the careful art of mathematical reasoning. The course is designed for those who will make the transition from techniques courses to conceptual mathematics. Designed for prospective high school teachers but is open to other students. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 475 Euclidean/NonEuclidean Geometry****3 Credits**

Axiom systems, models, independence, consistency; incidence, distance betweenness, congruence, convexity, inequalities, parallels, perpendiculars, the Klein model; Saccheri quadrilaterals, limit triangles, and the non-Euclidean geometry of Bolyai-Lobachevsky. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**Upper-Division Mathematics Elective (one course required)****MATH 285 Differential Equations****3 Credits**

Theory and solving techniques for general ordinary differential equations, first order and second order linear equations, boundary value problems, power series solutions, Laplace transforms, and system of first order equations. Emphasis on real world phenomena. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 310 Intro to Analysis I****3 Credits**

A re-examination of the calculus of functions of one-variable: real numbers, convergence, continuity, differentiation, and integration. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**MATH 314 History of Mathematics****3 Credits**

Evolution of mathematics from ancient numeral systems to twentieth-century mathematics. The effects of culture on mathematics and the impact of mathematics on cultures also considered. It is recommended that students have completed prerequisites within two years of enrolling in this course.

**Suggested Course Sequence****1st Semester - Fall**

Course	Credits
COM 113	3
ENG 100 or 101	3-5
Fine Arts*	3
Lower Division Mathematics Elective*	3
Social Science*	3
TOTAL	15-17

\*Choose with advisor

**2nd Semester - Spring**

Course	Credits
EDU 250	3
EDSC 311	1
CS 135	3
ENG 102	3
Science*	4
TOTAL	14

\*Choose with advisor

**3rd Semester - Fall**

Course	Credits
EDRL 471	3
Humanities*	3
MATH 181	4
Science*	3
STAT 152	3
TOTAL	16

\*Choose with advisor

#### 4th Semester - Spring

Course	Credits
EDSC 313	1
EDUC 323	3
EDUC 406	3
MATH 182	4
Social Science*	3
TOTAL	14

\*Choose with advisor

#### 5th Semester - Fall

Course	Credits
EDRL 474	3
EPY 330	3
MATH 251	3
MATH 283	3
MATH 330	4
TOTAL	16

#### 6th Semester - Spring

Course	Credits
EDSC 315	1
EDSC 453	3
EDRL 475	3
MATH 331	3
MATH 475	3
TOTAL	13

#### 7th Semester - Fall

Course	Credits
EDRL 477	3
EDSP 301	3
Mastery Course*	3
Upper Division Mathematics Elective*	3
TOTAL	15

\*Choose with advisor

### 8th Semester - Spring

Course	Credits
EDSC 483	14
EDSC 491	3
TOTAL	17