# Utah County Academy of Sciences
# Course Descriptions
# 2024-2025

***Mission Statement***

The mission of the Utah County Academy of Sciences Guidance department is to *"Increase the **D**esire to Learn, **D**evelop the **D**iscipline to excel, and Expand the **D**edication to succeed."*

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## CREDITS REQUIRED FOR HIGH SCHOOL GRADUATION FROM UCAS

The UCAS Board of Trustees requires that students in grades 9-12 earn the following minimum credits for graduation:

| Subject Areas | Units of Credit Required |
|---|---|
| Language Arts | 4.0 |
| Mathematics | 4.0 |
| Science | 4.0 |
| Social Studies | 3.0 |
| Digital Literacy | 0.5 |
| Career and Technology Education | 1.0 |
| Fine Arts | 1.0 |
| Physical Education | 1.0 |
| Health Education | 0.5 |
| STEM Education (Major and Careers) | 1.0 |
| Financial Literacy | 0.5 |
| **Total Required Core Credits** | **20.5** |
| Total Required Elective Credits | 3.5 |
| Total Required Credits | 24 |

# COURSE DESCRIPTIONS

*Note: (CE) means Concurrent Enrollment class for college credit. A minimum cumulative GPA of 3.0 and parental permission is required to enroll in CE classes.*

## ART

**One of these courses meets a graduation requirement for both UCAS and UVU.*

**Art 1010 - Introduction to visual art (CE)**
*9th and 10th grades*
Semester course: 3 UVU credits / 1 UCAS credit.
Students develop an appreciation of art. Studies elements and principles of art. Includes identification of major art forms, surveys art history, art criticism, and media.

## CAREER and TECHNOLOGY EDUCATION

**One of these courses is required for high school graduation.*

**Computer Science Programming I**
*9th and 10th grades*
Semester course: .5 UCAS credit.
An introductory course in program engineering and applications. The course introduces students to the fundamentals of computer programming. Students will learn to design, code, and test their own programs while applying mathematical concepts. Teachers introduce basic coding concepts and problem-solving skills.

**CS 1400 - Computer Science Programming II (CE)**
*9th and 10th grades*
Semester Course: 3 UVU Credits / 1 UCAS credit.
****Prerequisite: Computer Science Principles or Computer Science Programming I.***
This course introduces students to more complex data structures beyond those taught in Computer Science Programming I. It uses data structures, including sequential files, arrays, and classes. Students will learn to create more powerful programs within a specific programming language. Java, Python, C++, C#, Swift. The concurrent enrollment portion of the course also introduces techniques and tools to formulate and solve problems where computer algorithms and programs are a core part of an effective, repeatable solution. Demonstrates algorithmic thinking using procedural programs composed of sequences of commands, functions, loops, conditionals, and basic data structures. May be delivered online.

**CS 1410 – Object Oriented Programming III (CE)**
*9th and 10th grades*
**Semester Course: 3 UVU Credits/1 UCAS credit.**
******Prerequisite: Computer Science Programming 1.***
Teaches proper program structure using the core concepts of object-oriented programming: classes, objects, encapsulation, inheritance, and polymorphism. Presents problems of increasing size and complexity requiring OOP techniques, standard libraries, and other appropriate language constructs.

**INFO 2420 - Web Application Design (CE)**
*11th and 12th grades*
Semester course: 3 UVU Credits / 1 UCAS credit.
***Prerequisite: Computer Science Principles or equivalent.***
Focuses on the design and construction of Web pages and maintenance of Web sites. Includes foundations in standards-based HTML and CSS. Covers code markup, design concepts and web graphics manipulation, page layout, form development, and usability and accessibility issues. Teaches use of Web authoring tools for code development and site management. Requires individual projects.

**MECH 1010 (Robotics 1 and 2) - Fundamentals of Mechatronics (CE)**
*11th and 12th grades*
Full-year course: 3 UVU Credits, 1 UCAS credit.
***Prerequisite: Physics 1010 (may also be taken concurrently).**
Covers the fundamental skills and theory of the Mechatronics discipline. Teaches integrated system design which includes electrical, mechanical, and microprocessor programming theory. Discusses the fundamentals of materials science, manufacturing processes, and the application of automation systems in a production environment.

## DIGITAL LITERACY

**One of these courses is required for high school graduation.*

**Computer Science Principles**
*9th and 10th grades*
Semester Course: .5 UCAS credit.
Computer Science Principles introduces students to the breadth of the field of computer science. In this course, students will learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They will use data to discover new knowledge. Students will also explain how computing innovations and computing systems, including the Internet, work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.

**Computer Science Programming 1**
*9th and 10$^{th}$ grades*
Semester course: .5 UCAS credit.
Introduces the basics of computing, including computer hardware, and programming concepts, and language. Explores how computers work and how a computer may be programmed. Includes a brief history of computers, programming languages, and computer numbering systems. Presents basic programming constructs; students produce a variety of introductory-level programs. Surveys various computing professions.

**INFO 2420 - Web Application Design (CE)**
*11th and 12th grades*
Semester course: 3 UVU Credits / 1 UCAS credit.
***Prerequisite: Computer Science Principles or equivalent***
Focuses on the design and construction of Web pages and maintenance of Web sites. Includes foundations in standards-based HTML and CSS. Covers code markup, design concepts and web graphics manipulation, page layout, form development, and usability and accessibility issues. Teaches use of Web authoring tools for code development and site management. Requires individual projects.

## ENGLISH

**Four English credits are required for high school graduation.*

**English 9 Honors**
*9th grade only*
Full-year course: 1 UCAS credit.
This course includes work in reading, writing, speaking, technical writing, and presentations. Students will read literary and informative texts and write several different kinds of papers. The state core will be followed.

**English 10 Honors**
*10th grades only*
Full-year course. 1 UCAS credit.
This course includes work in reading, writing, speaking, technical writing, and presentations. Students will read literary and informative texts and write several different kinds of papers. The state core will be followed.

**English 11 Honors**
*11th grades only*
Full-year course: 1 UCAS credit.
Students will continue to develop skills in reading, writing, speaking, technical writing, and presentation. Students will study literary texts as well as informative texts and will write several different kinds of papers.

**UVU English**
*12th grade only*
English courses beyond ENGLISH 11 are offered at UVU. Students must pass pre-requisite classes and/or test into the English courses at UVU.
UCAS students are encouraged to take ENGL 1010 and ENGL 2010. Please visit UVU's website or course catalog for class descriptions.

## COMMUNICATION

**COMM 1020 - Public Speaking (CE)**
*This course meets a graduation requirement for UVU.*
*11th and 12th grades only*
Semester course: 3 UVU Credits / 1 UCAS credit.
Provides an introduction to basic concepts, theories, and principles of oral communication as applied to a variety of speaking situations. Develops competence in oral communication through performance, the development of critical thinking skills, arrangement of ideas, and use of evidence and reasoning to support claims. Explains how culture influences what is considered effective public speaking.

## FINANCE

**This course is required for high school graduation.*

**FIN 1060 - Personal Finance (CE)**
*11th and 12th grades only*
Semester course: 3 UVU credits / 1 UCAS credit.
The General Financial Literacy core is designed to represent those standards of learning that are essential and necessary for all students. The implementation of the ideas, concepts, knowledge and skills contained in the General Financial Literacy Core will enable students to implement those decision-making skills they must apply and use to become wise and knowledgeable consumers, savers, investors, users of credit, money managers, citizens, and members of a global workforce and society. The General Financial Literacy core will incorporate concepts and skills from mathematics, language arts, social studies, applied technology, character education, and applied service-learning.

## FOREIGN LANGUAGE

**SPAN 1020 - College Spanish 2 (CE)**
*11th and 12th grades only*
Full-year course: 5 UVU credits / 1.5 UCAS credits.
****Suggested Prerequisite(s): SPAN 1010, or AP Spanish.***
Includes grammar and language concepts, literature, and cultural readings. Uses an eclectic method of instruction, emphasizing conversational exchanges. Computer and multimedia lab use encouraged. Not for native Spanish speakers. Students who are currently in high school Spanish 3 and above are encouraged to register for this class.

# MATH

**Four credits in mathematics are required for high school graduation.*
**Students must be prepared for the rigor of an honors math course.*

**Secondary Math 1 Honors**
*9th grade only*
Full-year course: 1 UCAS credit.
Students in Secondary Mathematics I will learn about properties and theorems involving congruent figures to deepen and extend understanding of geometric knowledge from prior grades. SMI also ties together the algebraic and geometric ideas studied. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

**Secondary Math 2 Honors**
*9th and 10th grades only*
Full-year course: 1 UCAS credit.
****Prerequisite – Secondary Math 1H***
Students in Secondary Mathematics II will focus on quadratic expressions, equations, and functions, extend the set of rational numbers to the set of complex numbers, link probability and data through conditional probability and counting methods, study similarity and right triangle trigonometry, and study circles with their quadratic algebraic representations.

**Secondary Math 3 Honors**
*9th, 10th, and 11th grades only*
Semester course: 0.5 UCAS credit.
****Prerequisite – Secondary Math 2H***
Students in Secondary Mathematics III need to be aware that this is a fast-paced course in which students complete a full year of curriculum in one semester. The focus of SMIII is to pull together and apply the accumulation of learning that they have from their previous courses. They will apply methods from probability and statistics, expand their repertoire of functions to include polynomial, rational, and radical functions, they will expand their study of right triangle trigonometry, and will bring together all of their experience with functions and geometry to create models and solve contextual problems.

**MATH 1010 - Intermediate Algebra (CE)**
*11th grade only*
Semester course: 4 UVU credits / 1.25 UCAS credit.
****Prerequisite: Secondary Math I, Math II, and Math III - and an appropriate ALEKS PPL test score.***
Expands and covers in more depth basic algebra concepts introduced in Beginning Algebra. Topics of study include linear and quadratic equations and inequalities, polynomials and rational expressions, radical and exponential expressions and equations, complex numbers, systems of linear and nonlinear equations, functions, conic sections, and real-world applications of algebra. (This course will be offered only when filled.)

**MATH 1050 - College Algebra (CE)**
Semester Course: 4 UVU credits / 1.25 UCAS credit.
***Prerequisite: Secondary Math I, Math II, and Math III- and an appropriate ALEKS PPL test score.***
Includes inequalities, functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, conic sections, systems of linear and nonlinear equations, matrices and determinants, arithmetic and geometric sequences, mathematical induction, the Binomial Theorem, permutations and combinations, and an introduction to probability. (This course will be offered only when filled.)

**MATH 1060**
1 Semester: 3 UVU Credits / 1 UCAS Credit.
***Prerequisite: Math 1050 and an appropriate ALEKS PPL test score.***
Includes the unit circle and right triangle definitions of the trigonometric functions, graphing trigonometric functions, trigonometric identities, trigonometric equations, inverse trigonometric functions, the Law of Sines and the Law of Cosines, vectors, complex numbers, polar coordinates, and rotation of axes.

**UVU MATHEMATICS**
Math courses beyond Math 1060 are offered at UVU.

Students must pass pre-requisite classes and/or test into the appropriate math level.
Please visit UVU's website or course catalog for class descriptions.

## HEALTH
**This course is required for high school graduation.*

**Health**
*10th grade only*
Semester course: .5 UCAS credit.
This class is designed to inform students about themselves and their surroundings. It covers hygiene, mental health, circulatory system, first aid (CPR), substance abuse, physical fitness, and other related areas.

## PHYSICAL EDUCATION
**These courses are required for high school graduation*

**Individual Lifetime Activity**
*9th-12th grades*
Semester course: 0.5 UCAS credit.
By the end of high school, students will be college and career ready, as demonstrated by the ability to plan and implement different types of personal fitness programs, demonstrate competency in lifetime activities, describe key concepts associated with successful participation in physical activity, model responsible behavior while engaged in physical activity, and fill a need for self-expression, challenge, social interaction and enjoyment.

**EXSC 1097 - Fitness for Life**
*12th grades only*
Semester course: 2 UVU credits / .5 UCAS credit.
*Fulfills High School graduation requirement and UVU graduation requirement*
***Prerequisite: Individual Lifetime Activity. Taken on UVU campus from a UVU instructor.***
This class is designed for Senior students to give them information, tools, and skills to aid students in engaging in an active, healthy lifestyle throughout life. Offers the opportunity to learn about exercise program design, physiological adaptations that underlie fitness, and strategies to maintain an active lifestyle across the lifespan. Features access to high-quality exercise facilities. Requires participation in exercise 2 days per week outside of the scheduled class activities. Stresses comprehensive principles in health, wellness, physical activity, and fitness assessment.

## SCIENCE

**Four credits in science are required for high school graduation.*
**Three years of science required for UVU graduation.*

**Biology Honors**
*9th grade only*
Full Year Course: 1 UCAS credit
The biology class explores the patterns, processes, relationships, and the environments of living organisms. Students analyze data on the role of matter cycles and energy flow when organisms interact with their environment to explain how the stability and change of an ecosystem and biodiversity can be affected. Students investigate the structures and functions of living organisms needed in order to support necessary life functions. Students explore the cause and effect relationships of heredity, the role of DNA in gene expression and protein synthesis, and how gene expression can be altered by environmental and genetic causes. Students investigate how the mechanisms of genetic variation can lead to diversity within and among species and explain how the unity among species as well as the great diversity of species is a result of evolution by natural selection. Additionally, students design and evaluate solutions to problems that exist in these areas.

**BIO 1010/1015 - General Biology (CE)**
*9th through 12th grades.*
Full Year course: 4 UVU credits / 1.25 UCAS credit.
Addresses the history of biological discovery, our current understanding of the science, and inquires about where our research may lead us. A general education course introducing cellular and molecular biology, genetics, diversity, evolution, and ecology. **BIOL 1015** taken concurrently with emphasis on the application of the scientific method. Includes actual student experiences with living organisms, use of the microscope, field excursions, and an introduction to techniques used in the study of life.

**BIO 1610/1615 - Biology (CE)**
*11th and 12th grades only*
Full Year course: 4 UVU credits / 1.25 UCAS credit.
***Prerequisite: ACT (or equivalent) composite score of 21+.***
Gives a broad exposure to many aspects of the life sciences. Covers topics of biochemistry, energetics, cell structure and function, genetics, and evolution. **BIOL 1615** taken concurrently which includes the following topics: scientific method, biomolecules, cell structure and function, cellular reproduction, Mendelian and molecular genetics, DNA technology, and evolution.

**CHEM 1010/1015 - Introduction to Chemistry (CE)**
*10th grade only*
Full Year course: 4 UVU credits/ 1.25 UCAS credit.
Assumes no previous knowledge of chemistry. Presents the foundations of chemistry to students who need preparation for further study in chemistry as well as to students who only want to take an introductory course. Covers chemical measurements, atomic structure, formulas, chemical reactions and equations, chemical nomenclature, stoichiometry, molecules and chemical bonding, gas laws, liquids, solids, solutions, acids and bases.

**PHYSICS 1010 (CE)**
*11th and 12th grades only*
Full year course: 3 UVU credits / 1 UCAS credit.
Covers the fundamentals of classical and modern physics. Includes mechanics, fluids, heat, waves and sound, electricity and magnetism, light, optical, relativity, atomic, and nuclear physics. Includes lectures, classroom interaction, demonstration, and problem-solving.

**UVU SCIENCE ELECTIVES**
Additional science courses beyond those listed are available at UVU after a student passes pre-requisite courses. Please visit UVU's website or course catalog for class descriptions.

## SOCIAL STUDIES

**These courses are required for high school graduation.*

**Geography**
*9th grade only*
Semester course: .5 UCAS credit.
The study of physical and human characteristics of the Earth's people, places, and environments. Students will develop geographic thinking skills by studying the "why of where" as they examine the interactions, interconnections, and implications of forces shaping our world today. They will apply geographic knowledge and geo-literacy skills to identify, locate, interpret, analyze, and evaluate geographic patterns and processes. These standards emphasize both human geography and physical geography, and students will explore the interconnections between the two.

**World Civilizations**
*9th grade only*
Semester course: .5 UCAS credit.
This course addresses events and issues in world history from the earliest evidence of human existence to modern times. Whenever possible, students will be expected to make connections between historically significant events and current issues. These connections are intended to add personal relevance and deepen students' understanding of the world today. Topics include, but are not limited to, the Neolithic Revolution, the dawn of civilization, the development of world religions, patterns in world trade, contributions of classical civilizations, the diffusion of technology, colonization and imperialism, global conflict, modern revolutions, and independence movements, and current trends in globalization.

**HIST 1700 - American Civilization (CE)**
*10th grade only*
Semester course: 3 UVU credits / 1 UCAS credit.
*Also meets UVU graduation requirement*
Stresses movements and developing institutions that are important for an appreciation of American History from the Pre-Columbian period to the present. Discussions include analysis of developing political, economic, and social institutions and their interrelationships with, and impact upon, the geographical features of the land. Includes book reports, oral responses, research papers, media presentations, and applications to current events. Students must pass an exam at the end of the course to meet High School graduation requirements.

**POLS 1100 - American Government (CE)**
*11th and 12th grades only*
Semester course: 3 UVU credits / 1 UCAS credit.
*Also meets UVU graduation requirement*
Studies history and structure of American National Government, rights and responsibilities of citizens, political institutions, political processes, and governmental policies.

## STUDENT LEADERSHIP AND SUCCESS STUDIES

**SLSS 104R- Principles of Leadership 2 - Community Leadership and ACT Prep (CE)**
*10th Grade Only*
Semester course: 1 UCAS credit.
***REQUIRED Semester class for ALL Sophomores Students.***
In this follow up class to SLSS 001, we will build on the foundation of personal leadership to become an effective leader in your family or community. We examine the need for good communication, trust and team work in becoming someone who leads others with positivity and accountability. We discuss leaders who are more people focused and those who show more concern for tasks (results). We consider why team members might need more support in their everyday efforts and some who might need more challenge in keeping themselves motivated and growing. A variety of methods are used from simulations to group presentations to work on and develop real word leadership skills. This class is a power packed rocket ship with the goal of becoming a leader who will shape his or her world in limitless positive ways. In addition to leadership development, the class also focuses on preparing students who will be taking the ACT. The tips and strategies taught in this class allow students to use what they have learned throughout their years of education. Knowing how to best approach the test may be half the battle in receiving a higher score. Mixing common sense ideas, with data backed research, will put the student in the driver's seat and enable them to excel at this pivotal test.

**SLSS 1000 - Student Success (CE)**
*11th grade only*
Semester course. 3 UVU Credits / 1 UCAS credit.
***REQUIRED Semester class for ALL Junior Students.***
Helps students develop a learning system for attaining maximum success in college, in work, and life. Presents effective techniques for dealing with time management, reading, writing, and critical thinking. Covers topics such as memory, note-taking, test-taking, and relationships. Develops an awareness of campus resources and assists students in exploring and establishing personal, academic, and career goals. Includes lectures, group interaction, exercises, and projects which apply to learning to real-life situations.

**SLSS 101R - Career and Major Exploration (CE)**
Full Year course: 3 UVU Credits / 1 UCAS credit.
***REQUIRED full year class for ALL Seniors***
This class meets twice a week, two hours each week. Senior students will be engaged in the process of gaining information on scholarships, college applications, and occupations. Classroom time will focus on lectures, individual work, and feedback from the instructor in the selection of majors and careers. Assesses and clarifies interests, skills, values, and personal characteristics. Explores college majors, careers, and the world of work. Integrates the knowledge of self with career options. Teaches decision-making skills to help make well-informed career decisions and goals. Develops an action plan for graduation.

PERSONAL DEVELOPMENT FOR PROFESSIONAL ADVANCEMENT CERTIFICATE (PD4PA)
Link to requirements through UVU to obtain this certificate.

## ELECTIVES

**The following classes require counselor/teacher approval. Students will receive a "P," pass or "F," fail grade for these courses.*

***Aide-Office**
*11th and 12th grades only*
Semester course: .5 UCAS credit.
Students will assist the office and counseling staff with school operations.
Students will receive a "P," pass or "F," fail grade for this course.

***Directed Studies**
*9th - 12th grades*
Semester class: .5 UCAS credit
This course is designed to provide students extra time and help during school hours to work on homework. Students will receive a grade for this course based on specific goal progress.

***Executive Success Skills**
*9th and 10th grades only*
Semester course: 0.5 UCAS credits.
It is provided to give students extra time and help during school hours to work on homework.
Students will receive a "P," pass or "F," fail grade for this course.

***Teacher Assistant**
*11th and 12th grades only*
Semester course: 0.5 UCAS credits.
Students will assist teachers with classroom/school operations.
Students will receive a "P," pass or "F," fail grade for this course.

**RELEASE TIME**
(including but not limited to LDS SEMINARY)
*9th - 12th grades*
Yearlong course: No UCAS credit.
Students are released from the UCAS campus to attend an LDS seminary course in the church east of UCAS.

**Yearbook**
*9th - 12th grades*
Full Year course: UCAS credit 0.5.
Application available through Dr. Hodson. Class meets 5 days a week during advisory.
Students will produce the school yearbook. Students should be self-motivated and willing to work extra hours to meet deadlines and due dates. They will develop and use skills in writing, editing, art, layout, design, photography, and leadership.

**Other - Any credit-producing course taken outside of the required UCAS courses may be considered for elective credit.**

## GRADING SYSTEM

Two Semesters per year:
.5 credits per class, per semester for UCAS courses.
Three UVU credits will equate to 1 UCAS credit.
All subjects and grades are included in the cumulative GPA and class rankings and receive equal weight.
GPA is calculated on a 4 point scale with A=4.00 | A-=3.67 | B+=3.33 | B=3.00 | B-=2.67 | C+=2.33 | C=2.00 | C-=1.67 | D+=1.33 | D=1.00 | D-=.67 | E, W, UW or F = 0.

## STUDENT PROGRESS

**ASPIRE/SIS**
Check your student's academic progress and attendance on the internet for classes held at UCAS. When a student enters UVU they will have their tracking system that is available to the student. This information can be accessed from the UCAS website under the parent/student tab.

**CANVAS**
Students who are enrolled in concurrent enrollment and on-campus UVU courses can track their progress through a program called CANVAS. This tracking tool can be found at http://learn-uvu.uen.org
CANVAS gives you the tools to manage classes, get real-time class updates and communicate easily with teachers and fellow students.

Check out Videos and Tutorials posted by Instructure on YouTube or contact the Help Desk for additional assistance at 801-863-8888 or helpdesk@uvu.edu or walk-in to BA-007.

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