



ASCEND

COLLEGE PREP

Course Catalog

2024-2025

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Math

All full-time students at Ascend must take a math course during each semester in which they are enrolled. Dual enrollment courses are taught year long, but college credit is earned in the Spring semester. Students who wish to take a math course not offered by Ascend may use our independent course program to take a math course through an approved online school.

Advanced Algebra & Financial Applications (0.5 credits per semester) – This course emphasizes linear and quadratic expressions, equations, and functions. This course also introduces students to polynomial, rational and exponential functions. Students explore

Algebra 2 (0.5 credits per semester) – This course emphasizes linear and quadratic expressions, equations, and functions. This course also introduces students to polynomial, rational and exponential functions. Students explore the structures of and interpret functions and other mathematical models. Students build upon previous knowledge of equations and inequalities to reason, solve, and represent equations and inequalities numerically and graphically.

MATH 1110 College Algebra (0.5 credits per semester) – An intensive study of algebraic functions, equations, and inequalities required for calculus. Emphasis on underlying algebraic structure and development of algebraic skills. The study includes: Equations and inequalities; graphs and functions; systems of equations and inequalities; polynomials and polynomial functions; rational expressions and equations; roots, radicals, and complex numbers; quadratic functions.

Foundations of Calculus (0.5 credits per semester) – This high-school level course prepares students for other college-level mathematics and science courses. Students build deep mastery of modeling and functions. The course framework delineates content and skills common to college precalculus courses that are foundational for careers in STEM. Heavy emphasis is placed on preparing students for success in Calculus 1.

MATH 1350 Calculus I (0.5 credits per semester) – Selected topics in analytical geometry and calculus, with pre-calculus and trigonometry topics included. Rates of change of functions, limits, derivatives of algebraic and transcendental functions, applications of derivatives, and integration. Pre-requisites: Algebra 2.

MATH 1360 Calculus 2 (0.5 credit hours per semester) – Continuation of Calculus 1. Transcendental functions, techniques and applications of integration, Taylor's theorem, improper integrals, infinite series, analytic geometry, polar coordinates. Pre-requisites: Calculus 1.

Probability & Statistics (0.5 credit hours per semester) - This course covers independent events, dependent probability, combinatorics, hypothesis testing, descriptive statistics, random variables, probability distributions, regression, and inferential statistics. The connection between statistics and probability is also highlighted as determining probable outcomes comes from an understanding of statistics.

MATH 2810 Intro to Basic Statistics (0.5 credit hours per semester) - The axioms of probability and conditional probability will be studied as well as the development, applications and simulation of discrete and continuous probability distributions. Also, expectation, variance, correlation, sum and joint distributions of random variables will be studied. Applications to statistics will include regression, confidence intervals, and hypothesis testing.

English & Language Arts

All full-time students at Ascend must take an English/Language Arts course during each semester in which they are enrolled. Dual enrollment courses are offered only to seniors and these courses are taught as one-semester courses. Seniors can earn up to 9 dual enrollment English credits during their senior year. Students who wish to take an English/Language Arts course not offered by Ascend may use our independent course program to take a course through an approved online school.

Junior English: The Grammar and Mechanics of Writing (0.5 credits per semester) - Teaches mastery of the basics of English grammar, so that students have a solid foundation to build from when constructing both oral presentations and written papers. Focuses on clear and persuasive writing. Students will learn to construct a research paper, with focus on analyzing arguments, conducting research, constructing a thesis statement, and writing a compelling argument with proper structure and citations.

Senior English (0.5 credits per semester)– This course focuses on the writing process (planning, drafting, and revising). Students will focus on different writing genres and organizational structures: expository, argument, narrative, descriptive, comparison-contrast, exemplification, process analysis, classification, cause and effect, and definition. Advanced language skills (grammar and usage) will be a major component of this class. An emphasis on research is also required.

Creative Writing (max of 0.5 credits) - In this course students will read, critique, and compose original poetry, essays, short fiction, and creative non-fiction. Students will examine the works of published writers as well as peers to discover, expand, and refine their own skills, voice, and repertoire. Students will share their work for both written and oral peer critique. Publication will be strongly encouraged as students develop portfolios of their writing.

Public Speaking (max of 0.5 credits) – This course focuses on developing public speaking skills. Students will identify effective methods for arranging ideas and information in written form and then convert the written form into an effective oral delivery. The course focuses on critical thinking, organizing ideas, researching counter viewpoints, and communicating appropriately for different audiences and purposes.

ENGL 1310 Rhetoric & Writing 1 (max of 0.5 credits) - Introduces students to academic reading and writing processes. Students develop critical reading, writing, and thinking skills through class discussion, the rhetorical analysis of academic texts, and the writing of analytical essays. Students write for a variety of purposes and audiences. Emphasis is given to reading and writing processes as multiple, and rhetorically diverse. Students may variously explore multicultural approaches to reading and writing, interdisciplinary approaches to reading and writing, community-specific definitions of literacy and language practices and/or the impact of technology upon academic reading and writing.

ENGL 1410 Rhetoric & Writing 2 (max of 0.5 credits) - Emphasizes argument and research supported through extended inquiry. Students use classical stasis theory to invent arguments as appropriate to audience and situation. Students map complex issues, summarize and negotiate counterclaims, and strategically cast their arguments in stasis deemed effective for their situation.

ENGL 1500 Intro to Literature for Non-Majors (max of 0.5 credits) - Fundamental literary analysis of poetry, drama and fiction. This course will introduce students to undergraduate literature studies. We will accomplish this through exploration of literature as communal transmission of knowledge, questioning, and meaning-making surrounding society's most delicate and influential issues.

Social Sciences

All full-time students at Ascend must take a Social Science course during each semester in which they are enrolled. All history and government courses are one-semester courses and Psychology is a year-long course. Students who wish to take a social science course not offered by Ascend may use our independent course program to take a course through an approved online school.

U.S. History (up to 0.5 credits per semester) – This course examines the major events and turning points of U.S. history from the Industrial Revolution through the modern age. The course leads students toward a clearer understanding of the patterns, processes, and people that have shaped U.S. history. As students progress through each era of modern U.S. history, they will study the impact of dynamic leadership and economic and political change on the rise of the United States to global prominence, the influence of social and political movements on societal change, and the importance of modern cultural and political developments.

PSY 1000 General Psychology (0.5 credits per semester) - An introduction to the scientific study of behavior. Covers psychoanalytic and Jungian theory, physiological bases of behavior, behaviorism and humanistic/existential theories. Includes psychology discipline areas of clinical, experimental, developmental, abnormal, and social.

HIST 1540 Recent America 1918-present (max of 0.5 credits) - Examines several topics of profound interest to historians worldwide: nature and technology, secular and religious faiths, and concepts of political union. The experience of the U.S. as it relates to the experiences of other periods and cultures.

U.S. Government (0.5 credits per semester) - This course will provide students with knowledge of United States government that will enable them to participate effectively in civic life in America. Students will examine fundamental constitutional principles; the organization of government at the federal, state, and local level; the rights and responsibilities of citizenship; the policy-making process; and the American economic system.

PSC 1100 The American Political System (max of 0.5 credits) – A general introduction to the American political system with emphasis on the inter-relations among the various levels and branches of government, formal and informal political institutions, processes, and behavior.

HIST 1900 Truth in History (max of 0.5 credits) - Explores various types of historical analysis and common pitfalls and fallacies in the writing of history. Examines a variety of cases where historians have significant disagreement or diverse interpretations regarding “what happened” and “why,” to come to an understanding of what historians do and how they do it. Both modern and historical cases will focus on America in a global context.

Leadership & Ethics (max of 0.5 credits) – This course will provide students with the skills necessary to begin the practice of moral leadership to instill change that has lasting impact on their community. Students will learn that being a moral leader is not about always knowing what is right or how to solve problems. Instead, moral leaders acquire the skills to mobilize people and engage with those problems to find solutions.

Philosophy & Ethics (max of 0.5 credits) - This course focuses on moral theories and issues, drawing on ideas from a variety of disciplines. Students will examine moral theories regarding what is right and wrong, good and bad and apply them to contemporary moral issues. Thinking philosophically about contemporary moral issues allows students to see how well-supported our beliefs are by reasoned argumentation, and this is why we examine those beliefs in light of philosophical moral theory.

Sciences

All full-time students at Ascend must take a science course during each semester in which they are enrolled. Dual enrollment courses are taught as year-long courses, but college credit is earned in the Spring semester. Students who wish to take a science course not offered by Ascend may use our independent course program to take a science course through an approved online school.

Aviation Science & Private Pilot Ground School (0.5 credits per semester) – This course will teach you everything you need to know to pass the FAA private pilot written exam. Topics include airplane systems, aerodynamics, airport environments, proper communications and phraseology, meteorology, FARs, aircraft performance, charts and navigation, and human factors.

PES 1050 & PES 1090 Astronomy w/Lab (0.5 credits per semester) – The methods and results of modern astronomy (solar systems and stars) at an elementary level. Includes *PES 1090* – A mixture of evening viewing and indoor exercises, weather dependent. Covering such topics as constellations and telescope observations, lunar geology, distance measurements, and earth seasons. This class may be taken as a dual-enrollment course or for high school credit only.

BIOL 1000 & BIOL 1060 Biology w/Lab (0.5 credits per semester) – The introductory principles of biology stressing the relationships between man and the environment. Concepts include heredity, evolution, genetics, nutrition, physiology, and ecology. Includes *BIOL 1060* – the laboratory component of the college course. This class may be taken as a dual-enrollment course or for high school credit only.

Principles of Bio-Medical Science (max of 0.5 credits) – This course serves to provide foundational knowledge and skills in fields such as biology, anatomy & physiology, genetics, microbiology, and epidemiology as well as engage students in how this content can be applied to real world situations, cases, and problems.

Physics w/Lab (0.5 credits per semester) – Covers the physics of mechanics and requires application of classical physics to both mathematical and conceptual problems. Major topics include kinematics in one and two dimensions, Newton's Laws, circular motion, work and energy, impulse and momentum, and rotational mechanics. This course may also include topics relating to simple harmonic motion and traveling and standing waves.

PED 1110 & PES 1160 Physics w/Lab (0.5 credits per semester) – Rigorous calculus-level course in classical physics for science and engineering students. Includes measurements, vectors, motion in one dimension, motion in three dimensions, particle dynamics, work and energy, linear and angular momentum, rotation of rigid bodies, static equilibrium, oscillation, and gravity. Includes *PES 1160* – Advanced calculus-based labs covering all of the major topics in mechanics ranging from projectile motion to Newton's Laws to Conservation of Energy to Rotational Motion.

CS 1120 Computational Thinking with Beginning Programming (max of 0.5 credits) – This course explores the ideas behind computational thinking: the thought processes involved in analyzing problems and formulating their solutions in precise, unambiguous ways. Topics include data collection, analysis, and representation; algorithms and procedures; simulation; and others. Most problem solutions in the course are implemented as computer programs.

Computer Programming 1 (max of 0.5 credits) – This course mirrors the CS1120 objectives, but it is taught at the high school level and does not earn college credit.

CS 1900 Introduction to Computer Security (max of 0.5 credits) - Students will learn basic cryptography, user authentication, access control, malicious software, network attacks and protection, software security, and operating system security. Students will also perform hands-on security lab exercises.

CS 1450 Data Structures & Algorithms (max of 0.5 credits) - Concepts of data type, data abstraction, and data structure. Internal representations of fundamental data types. Linear data structures: stack, queue. Linked data structures and dynamic data types. Search table data abstraction, linear search in arrays and lists, binary search in arrays and trees. Binary trees, non-binary trees, binary search trees.

Computer Programming 2 (max of 0.5 credits) – This course mirrors the CS 1450 objectives, but it is taught at the high school level and does not earn college credit.

Chemistry w/Lab - This course explores measurement skills, atomic structure, the periodic table, chemical bonding, stoichiometry, states of matter, kinetic theory, solutions, acids, bases, equilibrium, and both chemical and nuclear reactions. Students will study the mathematical relationships of chemical reactions and analyze gas behavior under experimental conditions and in problem-solving scenarios. Laboratory experiments are integrated to reinforce the course content.

CHEM 1401 & CHEM 1402 General Chemistry 1 w/Lab - This course is a college-level chemistry course for students with adequate high school chemistry and math. Emphasis on the structure and composition of matter: elements and compounds, atoms and molecules, and states of matter including solutions. It is strongly recommended that students have one year of high school chemistry and two years of high school math. CHEM 1402 is the lab section to accompany CHEM 1401. An introduction to qualitative and quantitative laboratory techniques, including spectroscopy, titrations, calorimetry, and chromatography.

BIOL 1300 & BIOL 1310 General Biology: Organismic Biology – This course is an integrated lecture-laboratory course that presents the diversity of prokaryotic and eukaryotic organisms emphasizing structure, function, ecology, and evolution. Successful completion of high school biology and chemistry recommended prior to taking this course.

Electives

All full-time students at Ascend will take elective courses to complete their schedule. Any academic course may be taken as an elective as long as the pre-requisites have been met.

French 1 (0.5 credits per semester) – French 1 introduces students to Francophone cultures and to the four basic language skills: listening comprehension, speaking, reading, and writing. Students acquire skills through oral repetition, dialogue, short composition, dictation, stories, reading, and written exercises.

French 2 (0.5 credits per semester) – This course builds on and consolidates the language skills acquired in French 1. This will involve the development of written language skills - composition, comprehension, translation, grammar - and spoken language skills - speaking, pronunciation, listening.

French 3 (0.5 credits per semester) – This course focuses on communicative competence and linguistic functional ability. The lessons cover grammar, vocabulary, and pronunciation as well as skills in speaking, listening, reading, and writing. Instructors adapt the content of the courses to students' needs in order to achieve a much greater fluency in a short period of time.

Art (max of 0.5 credits per year) – This course is designed as a basic introduction to Art. Emphasis is placed on understanding the Elements of Art and Principles of Design as a basis for composition. Students will explore a variety of artists, art processes and materials such as drawing, painting, printmaking, two & three-dimensional design, and digital art. Student artwork will reflect aesthetics & cultural and historical contexts. Willingness to get involved in the creative process is a more important requirement than the student's talent or previous experience.

Yearbook & Marketing (0.5 credits per semester) – This course produces The Atlas, the Ascend College Prep yearbook. In this course, students will gain skills in the following areas: page design, publishing techniques, copy writing, editing, photography, record keeping, time management, teamwork, marketing, and leadership skills. Students are tasked with producing a timeless, creative, and innovative publication which will record our school's community, memories and events. Students will also be tasked with social media updates and information campaigns.

Digital Photography (max of 0.5 credits per year) – This course focuses on the basics of photography, including building an understanding of aperture, shutter speed, lighting, and composition. Students are introduced to the history of photography and basic camera functions. They use the basic techniques of composition and camera functions to build a portfolio of images, capturing people, landscapes, close-ups, and action photographs.

Additional Required Courses

All full-time students will take the following courses during each semester they are enrolled.

Sophomore, Junior & Senior Seminar (0.5 credits per semester) – Seminar is a for-credit course that every student must take. This includes homeschool enrichment students. Topics covered during this period include but are not limited to standardized test preparation, the college application process, special programs meetings, class meetings, student council, NHS, social-emotional learning, office hours with teachers for extra help in courses, and course group work. This course meets for 40 minutes each day and attendance is taken. Students are assigned a teacher and a classroom for this period and they are awarded 0.5 credits per semester for this elective course.

Discovery Periods (required period but no credit earned) – Our Friday academic programming includes college fairs, job fairs, test preparation, guest speakers, educational extension activities, field trips, and community service. Detailed descriptions of each day involving these periods will be available at the beginning of the school year. Examples from previous years include field trips to the WWII Aviation Museum, the Mining Museum and the Olympic Museum. We have also completed large school-wide community service projects with Goodwill, United Way, Habitat for Humanity and Partners in Housing. All Discovery periods are considered academic time and are mandatory for all full-time students.

Independent Course Program/Supplemental Online Learning

The Independent Course Program is designed to provide students the opportunity to take additional core courses, world language courses, and other elective courses that interest them. These courses are taken through the BYU independent study program or another approved institute of higher learning. Students are assigned a faculty advisor and a period is allocated for the course. Attendance is taken daily, and student progress is monitored. Although the students complete their work in their online classroom, this is done on-site at Ascend. Upon successful completion of the course, the grade from the student's course transcript will be included on their official school transcript with the appropriate credit. AP and Dual Enrollment courses will be weighted appropriately.

Independent Study Program

The Independent Study Program is designed by individual students for enrichment and credit seeking purposes. Students will develop their course objectives and assignments, build a timeline for all assignment submissions, and plan a final capstone project to share with the school. Students will be assigned a faculty advisor to mentor them throughout the semester and ensure requirements are being met. Students meet with their faculty advisor 4 times throughout the semester, but daily attendance for this course is not taken. The Independent Study is scheduled as a class and students must show evidence of at least 60 hours spent on course products for 0.5 credit on the student's transcript. The Independent Study program cannot be used for any core courses.

Work Study Program

Work Study is provided for students who desire to explore a career in a field that is in alignment with their future goals or current employment. A portion of their school day will be spent working with an employer to gain valuable work experience prior to graduation. Students are granted release time from school to participate in part-time jobs in companies where they utilize their skills and knowledge by working as an actual employee. Hour requirements are at least 60 hours for 0.5 credit. Documentation of hours worked, and employment status are required and must be turned into a designated staff member. The work study program cannot be used for core course credit.

Internship Program

Students who want a more structured work experience related to their career pathway or postsecondary plans can take part in an Internship in the community. A part of their school day will be spent within a business/company/healthcare setting. The goals of the program will be individualized to each student and based on their specific occupational and/or training goals. Hour requirements are at least 60 hours during the semester for 0.5 credit. The internship program cannot be used for core course credit.