

AMES GRADUATION REQUIREMENTS AND COURSE CATALOG

2012-2013 School Year

AMES Counseling Center

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AMES GRADUATION REQUIREMENTS

Students must earn a total of 27.5 Units of Credit

The following credits can be earned through the AMES curriculum. Credits may also be earned through accredited programs including higher education, independent study, Cottonwood High School, Electronic High School, U of U High School University Program or other accredited alternatives. *Discuss outside options with your counselor prior to enrolling in courses.*

Please Check AMES Course Catalog for Descriptions of AMES and U of U Courses.

Language Arts **4.0 Credits**

English 9-12 (1.0 Credit each)

AMES Elective Language Art Courses:

Writing/Literary Magazine (1.0 Credit)

Journalism (1.0 Credit)

Humanities (0.5 Credit)

Introduction to Literature (0.5 Credit)

U of U Writing 1010 (1.0 AMES Credit & 3.0 of U of U Credits)

U of U Writing 2010 (1.0 AMES Credit & 3.0 of U of U Credits)

U of U Honors College Humanities (2.0 AMES Credits & 6.0 of U of U Credits)

Mathematics **4.0 Credits**

Math 1/1H (1.0 Credit), Math 2/2H (1.00 Credit), Math 3 (1.0 Credit), Modern Mathematics (1.0 Credit)
Pre-Calculus (1.0 Credit), AP Calculus (1.0 Credit), AP Statistics (1.0 Credit)

U of U Intermediate Algebra 1010 (1.33 AMES Credit & 4.0 U of U Credits)

U of U Introduction to Quantitative Reasoning 1030 (1.0 AMES Credit & 3.0 U of U Credits)

U of U College Algebra & Trigonometry 1050/1060 (2.0 AMES Credits & 6.0 U of U Credits)

U of U Calculus I & II 1210 & 1220 (2.67 AMES Credits & 8.0 U of U Credits)

Science **4.0 Credits**

Earth Science (1.0 Credit), Honors Biology (1.0 Credit), Honors Chemistry (1.0 Credit),
Physics (1.0 Credit), Physics Honors (1.0 Credit), Biochemistry (1.0 Credit)

AMES Elective Science Courses:

Astronomy (0.5 Credit)

Geology (0.5 Credit)

Engineering Foundations (1.0 Credit)

Science Fair Research (1.0 Credit)

U of U General Chemistry I & II 1210 & 1220 (2.67 AMES Credits & 8.0 U of U Credits)

U of U General Chemistry Lab I & II 1215 & 1225 (0.67 AMES Credit & 2.0 U of U Credits)

U of U Physics for Scientists and Engineers I & II 2210 & 2220 (2.67 AMES Credits & 8.0 U of U Credits)

Social Studies **3.5 Credits**

Human Geography H (1.0 Credit)

European History H (1.0 Credit)

U.S. History H (1.0 Credit)

U.S. Government & Citizenship (0.5 Credit)

AMES Elective Social Studies Course:

AP Psychology (1.0 Credit)

Computer Science **1.0 Credit**
Computer Technology/Introduction to Information Technology (1.0 Credit)

- AMES Elective Computer Science Courses:
Introduction to Computer Programming C++ (1.0 Credit)
Programming 1/Robotics (1.0 Credit)
Programming 2/C++ (1.0 Credit)
Digital Media (0.5 Credit)
A+ Computer Repair/Maintenance (0.5 Credit)
Computer Graphics (1.0 Credit)

Fine Art **1.5 Credits**
Fine Arts Exploration 1A (0.5 Credit), Fine Arts Exploration 1B (0.5 Credit)
Studio Art 1A (0.5 Credit), Studio Art 1B (0.5 Credit)
Studio Art 2A (0.5 Credit), Studio Art 2B (0.5 Credit)
AP Studio Art 2D (1.0 Credit), AP Studio Art Draw (1.0 Credit)
AP Art History (1.0 Credit),

World Language **2.0 Credits**
Spanish 1 (1.0 Credit), Spanish 2 (1.0 Credit), Spanish 3 (1.0 Credit)
Arabic 1 (1.0 Credit), Arabic 2 (1.0 Credit), Arabic 3 (1.0 Credit), Arabic 4 (1.0 Credit),
Arabic 5 (1.0 Credit)

World Languages taken through Cottonwood High School will also satisfy this requirement.

Career & Technical Education **1.0 Credit**
Internship Seminar I & II (1.0 Credit)
Engineering Foundations (1.0 Credit)
Desktop Publishing I (0.5 Credit)
Desktop Publishing II (0.5 Credit)

Physical Education **1.5 Credits**
Aikido (0.5 Credit)
Lifetime Fitness Packet through AMES (0.5 Credit)
Athletic participation on high school teams (0.5 Credit)

P.E. classes taken through Cottonwood High School will also satisfy this requirement.

Health Education **0.5 Credit**
Health (0.5 Credit)

Senior Project **1.0 Credit**
Senior Project (1.0 Credit)

Financial Literacy **0.5 Credit**
Financial Literacy (0.5 Credit)

Elective Credits **3.0 Credits**
Courses taken through AMES that do not satisfy any of the above credit requirements will be placed as elective credit for students.

COURSE CATALOG

Not all classes are offered each year, check with counseling center for information.

LANGUAGE ARTS (4 Credits Required)

ENGLISH 9

(1.0 Credit)

Prerequisite: None

The ninth grade language arts course connects reading instruction with writing for multiple purposes. The course continues intensive practice and study of informational and literary reading and writing. Students read extensively from a variety of sources, and draft, revise, and edit their own writing.

ENGLISH 10

(1.0 Credit)

Prerequisite: Language Arts 9

The tenth grade language arts course continues the intensive practice and study of informational and literary writing. Students refine skills in preparation for reading and writing assessments.

ENGLISH 11

(1.0 Credit)

Prerequisite: Language Arts 10

College prep language arts is a writing intensive course designed to prepare eleventh grade students for college-level writing their senior year. Also, this course is designed to teach students strategies in reading comprehension, writing ability, active listening, effective speaking, and critical viewing across the curriculum.

ENGLISH 12

(1.0 Credit)

Prerequisite: Language Arts 11

Language Arts 12 is designed to further develop students' skills in reading, writing, speaking, viewing, and listening. In this class, students will grapple with challenging texts, assignments, and ideas. Additionally, students will "fine tune" writing skills that will prepare twelfth graders for college.

Elective Language Art Courses

CREATIVE WRITING/LITERARY MAGAZINE

(1.0 Credit)

Prerequisite: 11th or 12th grade and Teacher Recommendation

This course is designed for any student who desires to focus on creative writing and is willing to experiment using a variety of literary genres. Students will explore their own creative voice through writing practice, role playing, discussion of other student writing, and published writings. Writing will be shared with the class in an open forum of discussion about the work and how to craft each piece. This is a class for students who are motivated and highly self-disciplined.

JOURNALISM

(1.0 Credit)

Prerequisite: 11th or 12th grade and Teacher Recommendation

Students will learn the skills necessary to produce and publish the school newspaper, the AMES Satellite. These skills include but are not limited to: gathering and writing news, editing copy, proofreading and correcting copy, writing headlines, preparing copy for publication, photo journalism, use of the computer to prepare copy for publication, and soliciting and preparing advertising copy.

INTRODUCTION TO LITERATURE

(0.5 Credit)

11th & 12th Grades

This course is an elective course for students interested in exploring exceptional literature in English. The course begins with an exploration into the question "what is genre?" and introduces students to the various forms of fictional literature, including narrative fiction (storytelling), poetry, and drama. Students will become familiar with methods of close reading and rhetorical analysis, and engage in discussion and writing to share their growing knowledge, understanding, and appreciation of literature.

HUMANITIES

(0.5 Credit)

9-12 Grades

This course examines social science theory, media, and philosophy through the medium of modern culture. Students will be introduced to a number of theorists and assess how their ideas apply to today's world. The class focuses on developing analytical and rhetorical skills, application of theory to practice and discussion.

University of Utah LANGUAGE ART Courses can be used for Graduation Requirements

WRITING 1010

Introduction to Academic Writing

(1.0 Credits, 3.0 University of Utah Credits)

Prerequisite: Language Arts 11 and Teacher Recommendation.

Students will discover ideas about issues that are significant to them and their community and learn to communicate those ideas in clear, logical, well-reasoned writing. Writing assignments will develop from the interrelationship between reading and writing and will emphasize the process of inquiry necessary to think, read, and write critically.

WRITING 2010

Writing for Academic and Public Discourses

(1.0 Credits, 3.0 University of Utah Credits)

Prerequisite: Minimum grade of C- in WRITING 1010

Students will be introduced to the strategies, tools and resources necessary to become successful communicators in a range of scholarly and professional contexts. Specifically, students will practice analytic and persuasive writing in a number of genres common to both academic and public discourses, while gaining expertise in library and internet research.

HONORS COLLEGE HUMANITIES

(2.0 AMES Credit, 6.0 U of U Credit)

12 Grades

Prerequisite: Teacher recommendation & other pre-requisites determined by University of Utah and U of U faculty.

Description: What is race? How does it affect you? Is race something we just make up, or is there a real difference between people of different races? Do white people have a race? What are the ideas and theories that have influenced popular perceptions about race and justified racist laws and policies? This class will look at some of the "scientific" theories and popular beliefs about race and how they have been used in the past as well as how they play out today. Students will carry out community-based research projects that examine an aspect of race in contemporary America.

MATHEMATICS

(4 Credits Required)

MATH 1 (1.0 Credit)

This course is for 9th grade students.

Prerequisite: Pre-Algebra or C or lower grades in Algebra I or 8th Grade Mathematics.

In this course students represent, analyze, and explore real number patterns from tables, graphs, verbal rules, and equations. Emphasis is on linear relationships and their applications. Students learn concepts through concrete models. *A graphing calculator is recommended.*

MATH 1 HONORS (1.0) Credit

This course is for 9th grade students.

Prerequisite: Geometry or A or B grades in Algebra I or 8th Grade Mathematics Honors

Students explore linear and exponential models for real-world problems. Arithmetic and geometric sequences and their connection to linear and exponential functions are investigated. Students will prove geometric theorems using coordinate geometry. Students will use vectors to investigate trigonometric ratios and transformations of functions. *A graphing calculator is required.*

MATH 2 (1.0 Credit)

This course is for 10th grade students.

Prerequisite: Math I or Teacher Recommendation

Students explore geometry, through logical processes, technology, constructions, manipulatives, and algebraic connections. Topics of investigation include points, angles, lines, plane and solid shapes, congruence, similarity, graphing, right triangle, and trigonometric ratios. *A graphing calculator is recommended.*

MATH 2 HONORS (1.0) Credit

This course is for 10th grade students.

Prerequisite: A or B grades in Math I Honors or Teacher Recommendation

Students continue to explore mathematical modeling of real-world problems, extending their knowledge of functions to quadratics, logarithms and trigonometry. Students will use the rules of probability to compute probabilities of compound events in a uniform probability model and use probability to evaluate outcomes of decisions. *A graphing calculator is required.*

MATH 3 (1.0 Credit)

Prerequisite: Math II or Teacher Recommendation

The study of functions is the primary focus of this class, including: quadratic, polynomial, radical, trigonometric, and probability functions. Complex numbers are introduced. In addition to algebraic methods for solving equations, students use technology to solve equations numerically and graphically. *A graphing calculator is required.*

PRE-CALCULUS (1.0 Credit)

Prerequisites: A or B grades in Math II Honors or Teacher Recommendation

This course extends the study of functions to include exponential, logarithmic, rational, and advanced trigonometric ones. Students study vectors, polar coordinates, complex number theory, and also arithmetic and geometric series. *A graphing calculator is required.*

MODERN MATHEMATICS

This course is for 12th grade students.

(1.0 Credit)

Prerequisites: C or lower grades in Math III or Teacher Recommendation.

Students investigate many of the same topics covered in Math II and Math III but in more detail. This course is for students who are not ready to take college level math their senior year.

AP STATISTICS

(1.0 Credit)

Prerequisites: A or B in Math II Honors or Math III. This course may be taken during either the 11th or 12th grade year along with the following math courses:

Pre-Calculus Math 1050/1060

AP Calculus AB Math 1210/1220

This course will prepare students for the AP Statistics Exam. This course includes topics typically taught in a college introduction course to statistics. Students will use statistics to analyze data in a variety of fields. Topics include elementary descriptive and inferential statistics, including the normal, binomial, student t, and chi-square distributions, correlation and regression, confidence intervals, and hypothesis testing. *A TI-84 or TI-89 calculator is required.*

AP CALCULUS AB

(1.0 Credit)

Prerequisite: Pre-Calculus A or B grade in Pre-calculus or Teacher Recommendation

Course Fee: \$10.00 (Study Guide)

This course will prepare students for the AP Calculus AB Test. This calculus course includes topics typically taught in a first semester college calculus course: Functions, graph, and limits; Derivatives and applications of derivatives; Integrals and applications of integrals.

A graphing calculator is required.

University of Utah MATH Courses can be used for Graduation Requirements

Math 1010

Intermediate Algebra

(1.33 AMES Credit 4.0 University of Utah Credits)

Prerequisites: Math 3 and teacher approval

Rapid review of elementary algebra; linear equations and inequalities, systems of linear equations; exponents, radicals, complex numbers, exponentials, logarithms; solving polynomial, rational, radical exponential and logarithmic equations; applications throughout these topics.

MATH 1030

INTRODUCTION TO QUANTITATIVE REASONING

(1.0 AMES Credit 3.0 University of Utah Credits)

Prerequisites: Math 1010 with a grade of "C" or better

This course is for students who don't necessarily plan on careers in science or engineering but who want to fulfill the University of Utah's general education math requirement. This course focuses on the use of mathematics to examine and describe change and growth in the real world. Students will examine the reasoning behind basic mathematical concepts, explore problems from different perspectives, and look for connections between the course material and other disciplines. The mathematics covered includes topics from financial mathematics, linear and exponential growth geometric measurements and scaling. *A scientific calculator is required.*

MATH 1050/1060

COLLEGE ALGEBRA & TRIGONOMETRY

(2.0 Credits, 6.0 University of Utah Credits)

Prerequisites: Math III and Teacher Recommendation

Topics of 1050 include: Review of intermediate algebra, functions, lines, slope, polynomials and rational functions, exponential and logarithmic functions, systems of linear equations & inequalities, matrices and determinants, inductions, sequences, binomial theorem. Topics of math 1060 include: Trigonometric functions, analytic trigonometry, oblique

triangles, vectors, the complex plane, and selected topics in analytical geometry.

MATH 1210 & 1220

CALCULUS I & II

(2.67 Credits, 8 University of Utah Credits)

Prerequisites: Pre-Calculus and Teacher Recommendation

The first semester covers functions and their graphs, differentiation of polynomial, rational and trigonometric functions, velocity and acceleration, geometric applications of the derivative, minimization and maximization problems, the indefinite integral, and an introduction to differential equations. It also covers the definite integral and the Fundamental Theorem of Calculus.

The second semester covers geometric applications of the integral, logarithmic, and exponential functions, techniques of integration, conic sections, improper integrals, numerical approximation techniques, infinite series and power series expansions, and continues differential equations.