



NORTH CEDAR ACADEMY

2017-2018 *Course Descriptions*

As a student in today's competitive and connected world, you achieve the success for which you were destined by embracing the next level, by accelerating your education, by becoming a conscientious citizen and leader of the world. The inherent opportunities at North Cedar Academy empower you to reach inside and discover your potential.

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NCA GRADUATION REQUIREMENTS

All students must complete the graduation requirements as established by the North Cedar Academy Board to be eligible for the North Cedar Academy Diploma. Students must obtain approval from the principal prior to enrolling in courses for credit which are not offered by North Cedar Academy. Students will not be permitted to participate in commencement exercises until all requirements and obligations are completed, (this includes fees, fines, and classroom materials and detention time owed). The following are the specific graduation requirements:

Academic Requirements for Graduation:

- 4.0 credits of English
- 3.0 credits of Mathematics
- 3.0 credits of Science
 - 1.0 credit of Chemistry/Physical science
 - 1.0 credit of Biology/Life sciences
 - 1.0 credit of additional science
- 3.0 credits of Social Studies
 - 1.0 credit of World History
 - 1.0 credit of United States History
 - 0.5 credit of United States Government
 - 0.5 credit of additional social studies
- 1.0 credit of Fine and Performing Arts
- 0.5 credit of Health
- 1.5 credits of Physical Education
- 10.0 credits of Electives

Total Number of credits required for graduation = 26 credits

Non-Academic Requirements for Graduation:

- 20 hours of Community Service

COURSE DESCRIPTIONS

ART

ART SURVEY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	7320	None

This course is for students who are just beginning their high school art experience. Students must be interested in improving their general art skills. Students will do many small projects which are designed to help them improve in the areas of drawing, painting, and design in general.

GRAPHIC DESIGN

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9,10,11,12	0.5	7330	None

This course explores and engages students in the essential fundamentals and tools used by professionals in the business world today for effective visual communication. Topics of study include operating systems, vector vs. raster graphics, elements and principles of design, typography, and logo design. The central focus throughout this course will be on finding creative visual solutions to communication problems using technical skills.

PAINTING

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	7340	None

This course is for students who want to improve and explore different domains of painting. Students will learn various techniques and explore drawing fundamentals and how it is incorporated into the painting process. Students will do various painting pieces while exploring different mediums from water colors to oil painting.

COMPUTER SCIENCE

GAME DESIGN

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	5100	None

The game industry holds a special interest for many students, and the field of game design and production is a hot career field. This course explores the basic elements of games and how to design them so that they provide the best possible experience for the players. The course covers game theory, design fundamentals, rules and component development, win conditions, prototyping, design iteration, and playtesting, as well as production (including graphic design/layout, costing, marketing, sales forecasting, printing/online production, copyright/trademark application, and release timing). All types of games are covered, including board games, card games, roleplaying games, family games, and computer games. Game industry professionals will provide guest lectures and workshops. We will be creating several games, both traditional and digital, and prototyping one for open testing at a game convention.

ENGLISH

ADVANCED COMPOSITION

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	0.5	1350	English I, or instructor consent

This course is intended to help students continue developing close reading, writing, and critical thinking skills as they prepare for advanced high school and college writing. Students will generate a variety of academic texts including a Research Proposal, Annotated Bibliography, Research Review, and a Research Argument Essay. Emphasis will be on *audience* and *purpose*, identifying credible research sources, planning, drafting, and revision, editing, and MLA citation format. ***Advanced Composition is strongly recommended for students planning to attend UW-Barron County.***

AMERICAN LITERATURE

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	0.5	1360	English I, English II or instructor consent

American Literature is a study of the literature of early America from Colonial America through the Civil War. This study will look at novels, short stories, poetry, drama, essays, and biographies. The course will include analysis, discussion, research, and composition. The class is designed to develop an appreciation for American literary heritage and study the events which have influenced American writers. Notable writers that may be addressed: Washington Irving, Edgar Allan Poe, Ralph Waldo Emerson, Henry David Thoreau, Harriet Beecher Stowe, Frederick Douglass, Nathaniel Hawthorne, Herman Melville, Walt Whitman, Thomas Paine, and Benjamin Franklin. College bound students should strongly consider taking this survey course.

CHINESE POETRY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	7450	Knowledge of the Chinese language

Students will study classical poems throughout the different dynasties, and will learn how to write poems in classical Jueju (or curtailed verse) style.

CLASSICAL MYTHOLOGY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	0.5	1370	English I or by instructor consent

Strange and intriguing tales of creation, love, hate, war, jealousy, and pride, tensions between good/evil, mythical beings, mythical journeys, and the spirit-world and afterlife have engrossed us for thousands of years. The primary focus in this course is classical mythology (ancient Greek and Roman gods/goddesses) and the cultural contexts in which they arose, as well as their enduring relevance in our modern world. In the final project for the course, students will explore/compare mythologies of the world (e.g., Norse, Chinese, African, Native American, and Polynesian). We will discover how myths address essential questions about the *human condition* while revealing our cultural values, examine the ways in which we shape myths and how we are shaped by myths, and learn how myths reflect humankind's innate desire to tell stories.

ENGLISH I

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9	1.0	1000/1005	None

English I is a reading-intensive writing course that introduces students to strategies for critical reading, personal, and academic writing. Students will read a variety of fiction and nonfiction and will learn strategies to help them write a variety of well-organized essays including personal, descriptive, creative, compare-contrast, process, and argument, as well as review the basics of grammar and mechanics. Additional goals include vocabulary building and raising rhetorical awareness. Assignments and course learning outcomes emphasize all aspects of the writing process from brain-storming, prewriting, drafting, revision, to final editing. English I prepares students to write in a variety of genres, and helps prepare them for more challenging reading, writing, and research tasks in English II.

ENGLISH II

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10	1.0	1050/1055	English I or equivalency

Students continue to hone critical thinking, reading, writing, and research skills through a variety of tasks including rhetorical analysis, synthesis, and argument. Readings will include both works of fiction and nonfiction, ranging from short pieces (articles, poetry, and short stories) to novels. Writers will learn to effectively support a central claim, or thesis, based on their *audience* and *purpose*. Students will also learn to evaluate credible textual and web-based research, use appropriate MLA citation, and apply ethical skills when writing to inform, persuade, or make a strong argument using credible research-based texts. Additional goals include vocabulary building and increased rhetorical awareness. English II is designed to help students become successful readers, writers, and researchers and prepare them for success in higher-level reading and writing-intensive courses

ENGLISH AS A SECOND LANGUAGE I (ESL)

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7900/7910	None, class can be repeated for English credit

This course is intended to help students who have a difficult time communicating and expressing themselves using English in an academic setting. Students will not only focus on individualized plans based on their needs, but also group discussions and activities to build skills such as: reading and listening comprehension, vocabulary expansion, pronunciation, and basic grammar. The objective of this course is to provide intensive English instruction in academic and conversational English in order to be successful in high school and assimilate into the American culture. This class is focused on helping beginning English Language learners and students enrolled within this class will receive the most intensive support.

ENGLISH AS A SECOND LANGUAGE II (ESL)

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7920/7925	None, class can be repeated for credit

ESL II is designed for students who are at intermediate levels of English proficiency. This class will focus on continuing to build proficiency in reading, writing, listening and speaking skills. Direct and explicit instruction of English rules that would have been missed at the elementary level, slang, idiomatic phrases, etc. will be delivered in a very interactive setting. This class is focused on building the capacity of intermediate English learners to be successful not only in speaking but also in the academic classroom.

ENGLISH AS A SECOND LANGUAGE III (ESL)

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7930/7935	None

ESL III is designed for students who are at advanced levels of English proficiency. Students enrolled within this class will building the capacity of advanced English learners to be successful not only in speaking but also in the academic setting. Students enrolled within this class are expected to have a more advanced knowledge of English but need more support within the academic setting.

LITERATURE AND THE HUMAN EXPERIENCE

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	0.5	1340	English I or by instructor consent

Students in Literature and the Human Experience will continue to sharpen communication skills (reading, writing, speaking, and listening) while exploring the genres of short story, poetry (and song), essay, and drama. Students will study both classical and modern literature, reading and writing about the literature they've read, and trying their hand at writing their own original pieces in the various genres. This course is designed to provide a solid base for future courses (both high school and college) in critical thinking and literary analysis as students learn to read, write, and speak about literature using correct terminology.

PUBLIC SPEAKING

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	1150	None

Public Speaking is a practical course designed to offer the novice speaker a number of opportunities to deliver interesting, effective, and persuasive speeches. Emphasis is on effective topic selection, research, organization, preparation, delivery, and evaluation of informative, persuasive, and special-occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. Students should also demonstrate the speaking, listening, and interpersonal skills necessary to be effective communicators in academic settings, in the workplace, and in the community.

HEALTH AND WELLNESS

HEALTH

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	8405	None

The purpose of this course is to promote positive decision making and practices for healthy living in today's world. The health information presented and discussed throughout the semester will enable students to assume responsibility for their own health. Students will be expected to discuss issues with others and to use what they learn by practicing, applying, and acting in a responsible health-conscious manner. Some of the issues studied are goal setting, Red Cross C.P.R., first aid, nutrition, alcohol and drug abuse prevention, violence prevention, conflict resolution, human growth and development and effective communication.

FITNESS FOR LIFE

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	8100	None, class can be repeated for credit

This class emphasizes personal fitness and goal setting. Activities will include speed workouts, weight-lifting, snow-shoeing, cross-country skiing, step aerobics, hiking, biking, and jogging. With the help of instructor, students will set fitness goals and objectives. This course may be repeated for credit

MATH

ALGEBRA

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	3600/3605	None

Intermediate Algebra is a course designed to cover a general overview of algebraic concepts. Topics covered in this course include: Review of Real Numbers, Solving Equations & Inequalities, Solving Systems of Equations & Inequalities, Polynomials & Exponents, Rational Expressions, Radical Expressions & Rational Exponents, Quadratic Equations & Inequalities, Exponential & Logarithmic Functions, Sequences & Series, and Conic Sections. The textbook anticipated to be used in this course is: *Intermediate Algebra, 8th Edition* by Aufmann & Lockwood. As in most math courses, the student should be conscious of the fact that note taking is important and doing assignments is a must.

GEOMETRY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	3650/3655	Algebra

Geometry is a course designed to cover a general overview of traditional high school geometry concepts. Topics covered in this course include: Basics of Geometry, Reasoning & Proofs, Parallel & Perpendicular Lines, Transformations, Congruent Triangles, Triangle Relationships, Quadrilaterals & Polygons, Similarity, Right Triangle Trigonometry, Circles, Volume/Area, Probability. The textbook to be used in this course is: *Geometry, 2015 Edition* by Larson and Boswell.

PRECALCULUS

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	3700/3705	Algebra, Geometry

Pre-calculus is an extension of algebra skills with an emphasis on trigonometry and preparation for calculus. Many higher order topics from Algebra II are reviewed such as solving and graphing quadratics, higher degree polynomials, and graphing trigonometric functions. Extensions include proving and applying trigonometric identities, matrix operations and applications, and graphing parametric equations and polar coordinates. The textbook anticipated to be used in this course is: *Precalculus, 9th edition* by Larson. As in most math courses, the student should be conscious of the fact that note taking is important and doing assignments is a must. It is recommended to purchase a TI-83 graphing calculator for this course.

AP CALCULUS AB

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
11, 12	1.0	3650/3655	<i>Must have a B or higher in Precalculus or teacher consent</i>

Calculus is generally offered to incoming college freshman majoring in engineering, mathematics, or specific science related fields. Topics covered provide students with many skills used to solve a variety of more advanced problems. Graphing calculators are used extensively in this course. Topics covered in this course include the formal definition of a limit, differentiation strategies, integrations techniques, and applications of derivatives & integrals. College credit will be earned upon passing the AP exam. The textbook anticipated to be used in this course is: *Calculus, 10th edition* by Larson & Edwards. As in most math courses, the student should be conscious of the fact that note taking is important and doing assignments is a must. Graphing calculators (TI-83) will be used extensively in this course. *AP Calculus AB students are expected to take the AP exam given in May.*

AP STATISTICS

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
11, 12	1.0	3220/3225	<i>Must have a B or higher in Precalculus or teacher consent</i>

Statistics and Probability is generally offered to incoming college freshman majoring in engineering, mathematics, or specific science related fields. Topics covered provide students with many skills used to solve a variety of more advanced problems. Graphing calculators are used extensively in this course. Topics covered in this course include Descriptive Analysis & Presentation of Single Variable Data & Bi-Variate Data, Probability Distributions, Normal Distributions, Statistical Inferences, Linear Correlation & Regression Analysis, and Nonparametric Statistics. College credit will be earned upon passing the AP exam. The textbook anticipated to be used in this course is: *Elementary Statistics, 10th edition* by Johnson & Kubly. As in most math courses, the student should be conscious of the fact that note taking is important and doing assignments is a must. Graphing calculators (TI-83) will be used extensively in this course. *AP Statistics students are expected to take the AP exam given in May.*

PERFORMING ARTS

BEGINNING BAND

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7600/7605	<i>None</i>

This full-year class is for students who have never been in band, but would like to learn to play a band instrument. Students may choose to study the flute, clarinet, saxophone, trumpet, trombone, baritone, tuba, or percussion. In order to enroll, students must rent or own a band instrument, which can be facilitated through the school. The goal of this class is for students play instruments at a gradually increasing level of proficiency, made possible through regular practice. A performance will be presented at the conclusion of the semester, and also at the end of the year.

INSTRUMENTAL ENSEMBLE

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7550/7555	<i>Previous knowledge of how to play an instrument, or teacher consent; course may be repeated for credit</i>

Instrumental Ensemble is a full-year performance-based course which offers students diverse musical experiences through the study and performance of music in a group setting. This class familiarizes members with various musical genres, including pop, jazz, classical, rock, and more, of both traditional and non-traditional literature. All instruments of the band are welcome, as well as rhythm section instruments, and string instruments. Throughout the year, the ensemble performs at assemblies and other school events such as formal concerts.

CONCERT CHOIR

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7761/7762	<i>None, course may be repeated for credit</i>

Students in concert choir will develop basic vocal and musicianship skills including tone quality, range, intonation, balance, and diction. They will study and perform a wide range of choral literature. Students will also develop and experience the aesthetics of musical expression. Students will perform two or more concerts during the school year.

MUSIC APPRECIATION I

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	7741	<i>None</i>

This course is the study of basic music theory elements, along with a brief overview of the history of western music (renaissance, baroque, and classical eras) and the corresponding literature of those eras. Included in the theory portion will be basic note writing, rhythms, time signature, key signature, circle of fifths, major and minor scales and chords, root position and inversions, transposing, and creating a simple composition for a solo instrument. Some simple musical forms will be studied, such as the minuet, rondo, invention, and canon.

MUSIC APPRECIATION II

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	7742	<i>Music Theory I or teacher consent</i>

This course is a continuation of Music Appreciation I. Students will build upon the knowledge gained in Music Appreciation I and will continue their study of music theory, history of western music (romantic and modern eras), and the corresponding literature of those eras. The theory portion will include the study of chords (diminished, augmented, sevenths, major sevenths), as well as the study of modes, standard chord progressions, primary and secondary chords, relative minors in all forms (harmonic, melodic, and pure), and two and four part writing. Various forms, such as rondo, minuet, waltz, invention, fugue, and sonata will be studied.

PIANO I

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.25	7721	None

This course is designed to be an individualized approach to the piano keyboard for the student with few keyboard skills to the advanced student. For the beginner pianist the course content includes the following: playing in five-finger patterns and triads in some major and minor keys, scales and chord progressions in all major keys, legato and staccato technique, and basic note reading. Intermediate and advanced students will be expected to perform the above tasks, as well as learn all minor scales and chords, along with learning piano literature at their skill level. Instruction will be individual (intermediate and advanced students) and small group (beginner level).

PIANO II

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.25	7731	Piano I or teacher consent

This course is a continuation of Piano I. Additional course work for the beginner pianist includes major and minor scales and chord progressions, harmonization of a given melody with a block chord accompaniment, playing various rhythms and in simple and compound meters, and performing simple sight reading tasks for two hands in treble and bass clef. Intermediate and advanced students will be expected to perform the above tasks, as well as learn and memorize two pieces of literature at their skill level, and perform one piece for an audience. Instruction will be individual (intermediate and advanced students) and small group (beginner level).

THEATER ARTS I

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.00	7780	None, course may be repeated for credit

This course is designed to introduce students to the various elements of the amazing world of theater and to encourage students in further participation. Theater Arts I will include various units of study including, but not limited to: scene study, monologue, musical theater, mime, rhyme, rap, the writing of scenes or short plays, historical perspective, and more. Students will grow from reflecting and evaluating personal work and the work of others. Each semester will culminate in performance.

WORLD MUSIC

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.00	78	None

This course will include the study of diverse music traditions from around the world through listening, viewing, the reading of scholarly articles, and the occasional playing of instruments and/or singing. Students will learn methods by which to evaluate musical compositions, arrangements, and performances. Individual and partner presentations on student-chosen particular types of music will be presented each quarter. Students who do not play an instrument or sing are entirely welcome to take this course!

SCIENCE

AP BIOLOGY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	4060/4065	<i>Algebra, and a B or better in Biology, or teacher consent</i>

AP Biology is a rigorous life science course designed to prepare students for college or technical school. It is particularly recommended for anyone aspiring toward a career in medicine, biotechnology or any other scientific field. The course focuses on the four Big Ideas of Biology: Evolution, Use of Free Energy by Biological Systems, Information Storage/Retrieval/Transmission in Biological Systems, and Interaction of Biological Systems. Instruction will rely heavily on inquiry and critical thinking activities. This course requires proficiency in mathematics, as the mathematical relationships involving systems and their interactions will be studied. Laboratory exercises will be used to emphasize and reinforce classroom theory and to promote analytical thinking through application of the scientific method. *AP Biology students are expected to take the AP exam given in May.*

AP ENVIRONMENTAL SCIENCE

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	4196/4199	<i>Must have a B or higher in Environmental Science or teacher consent</i>

The AP Environmental Science course is a rigorous science course that stresses scientific principles and analysis and includes a laboratory component; as such, it is intended to enable students to undertake a more advanced study of topics in environmental science. Topics include: Environmental Problems (Causes and Sustainability), Environmental History, Matter and Energy, the Living World, Population, Land & Water Use, Earth Systems, Pollution, Earth Resources, Energy Resources/Consumption, Global Change, Ecological and Human Health, and other topics of interest. Laboratory exercises will be used to emphasize and reinforce classroom theory and to promote analytical thinking through application of the scientific method. *AP Environmental Science students are expected to take the AP exam given in May.*

ASTRONOMY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	4450	<i>Enrolled in or completed Algebra</i>

Astronomy is one of the two basic divisions of Earth Science. As long as humans have walked the earth, they have gazed up at the stars and wondered. No other science speaks so powerfully to the commonality of human experience. Topics covered include the history of astronomy, constellations (composition and cultural background), the solar system, the Sun, the Moon, the inner and outer planets, comets, meteors, asteroids, the nature of light, the stars, the galaxies, the cosmos, the history and future of the universe, Kepler's laws, telescopes, observatories, and navigation of the night sky. The course includes several night-time star parties on the campus lawn, with and without the use of our high-tech telescope, as well as one or more field trips to observatories and planetariums. This course requires proficiency in algebra, as the mathematical relationships relating to the nature of waves and light will be studied. Selected laboratory exercises will be used to emphasize and reinforce classroom theory and to promote analytical thinking through application of the scientific method. Offered intermittently based on interest and availability.

BIOLOGY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	4050/4055	Be enrolled in or have completed Algebra

Biology is the fundamental life science course. This course provides an overview of the living world and how it functions. Areas of study include characteristics of life, basic biochemistry, the cell, photosynthesis, respiration, energy flow in living systems, genetics, evolution, plant and animal systems, and human biology. Students will perform hands-on laboratory experiments and projects while learning about the living world.

BOTANY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	4070	Be enrolled in or have completed Biology

This course is an introduction to the biology of plants. Topics include plant classification, morphology, anatomy, physiology, diversity, organic gardening, and evolutionary/ecological relationships. The course includes both laboratory and field exercises.

CHEMISTRY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	4150/4155	C or better in Algebra or instructor consent

Chemistry is one of the fundamental courses for a career in medicine, engineering, technology or any other scientific field. Chemistry is the study of matter and its interactions, and is one of the physical sciences. Topics covered include classification of matter, chemical and physical properties/changes, atomic theory, atomic structure, bonding, ions, isotopes, chemical reactions, moles, balancing equations, stoichiometry, thermodynamics, the periodic table, VSEPR theory, nuclear chemistry, solutions, acids/bases, and basic organic chemistry. This course requires proficiency in mathematics, as the mathematical relationships involving structure and chemical changes will be studied. Laboratory exercises will be used to emphasize and reinforce classroom theory and to promote analytical thinking through application of the scientific method.

ENVIRONMENTAL SCIENCE

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	4090/4095	None

Environmental Science is the study of interrelationships in the natural world, human interaction with the natural world, and the societal, political and moral views that guide and impact our views and interactions with nature. Students interested in the environment and environmental issues, and those who are considering employment in the area of forestry or other natural sciences will benefit from successfully completing Environmental Science. This course will provide students with the scientific principles, concepts and methodologies needed to understand the interrelationships in the natural world. Students will be given ample opportunity to apply their knowledge in the identification and analysis of environmental problems and to identify possible courses of action once the benefits and risks have been evaluated.

GENETICS

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	4072	Be enrolled in or have completed Biology

This course delves deeply into the science of genetics. The course begins with a review of meiosis and Mendelian genetics, then covers non-Mendelian patterns of inheritance, such as incomplete dominance, codominance, sex-linked inheritance, polygenic inheritance, and more. Also included are karyotyping, types of mutations, genetic disorders, genetic treatments, GMOs, the ethics of genetic technology, and the human genome. Includes laboratory exercises.

GEOLOGY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	4455	None

This course offers a general survey of the rocks and minerals composing the earth, its surface features and the agents that form them, and the dynamic forces of plate tectonics. Specific topics include: Earth in the Solar System, Geologic Time & Dating, Plate Tectonics, Rock Types, the Rock Cycle, Minerals & Gemstones, Crystallization, Weathering & Erosion, Soils, Radioactive Dating, Earth's Interior, Historical Geology, Glaciers & Ice Ages, and other topics of interest. Selected laboratory exercises will be used to emphasize and reinforce classroom theory and to promote analytical thinking through application of the scientific method. Offered intermittently based on interest and availability.

PHYSICS

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	4250/4255	Algebra and enrolled in or completed Precalculus; or instructor consent

Physics is the study of energy and motion. Topics covered include the scientific method, measurement, vectors, mechanics (kinematics, circular motion, Newton's Laws, forces, machines, simple harmonic motion, and fluid mechanics), gravitation, wave mechanics, heat, light, and sound. Physics is essential to those students who wish to pursue engineering careers or other math/science related fields. Periodic laboratory exercises will allow students to confirm and verify classroom theory. A sound mathematical background is assumed (students will be required to solve a variety of problems using algebra and basic trigonometry). Projects will include a Rube Goldberg Machine for the regional contest. *Note: Students preparing for careers in engineering, trade/technical occupations, or post-secondary science related fields should take Physics before graduating.*

SOCIAL STUDIES

BROADFIELD PSYCHOLOGY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	0.5	2710	None

This course investigates human behavior. Topics covered include memory, the brain, aging, child development, mental illness, intelligence, learning, and psychological research. Content is presented in a number of ways including lectures, video presentations, oral reports, and written projects.

CHINESE THOUGHTS

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	2700	None

The major goal of this course is to expose students to major Chinese Thoughts of Confucianism, Daoism and Buddhism through reading and understanding the major Texts. Over the course, those finishing the course will have acquired the following skills: Basic knowledge and understanding of Confucianism, Daoism and Buddhism.

UNITED STATES HISTORY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	2000/2005	None

This course delivers a general survey of United States history from colonial times through the end of the 20th century. This course will provide a global view of the significant and central people and events that shaped the United States of America as it exists today, with a focus on domestic, international, social, economic, and political issues and outcomes that influenced and contributed to the United States' emergence as a lasting, multi-century world power.

UNITED STATES GOVERNMENT

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.5	2111	None

This course examines the origins, nature of, and changes in American government from colonial times through the present. Students will learn about the importance of divided, republican government, exploring the United States' executive, legislative, and judicial branches on a more interactive level. Topics of study include the Constitution, federalism, civil liberties, the electoral process, landmark Supreme Court cases, the making of foreign policy, and a closer look at the inner workings of state and local governments. Additionally, this course compares the American political system to others throughout the world. As this course is designed to encourage the global-consciousness of the student, current events are an integral part of this course.

WORLD GEOGRAPHY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	0.50	2850	None

World Geography is a yearlong course that focuses on the distribution, processes, and effects of human populations on the planet. Units of study include population, migration, culture, language, religion, ethnicity, political geography, economic development, industry, agriculture, and urban geography. Emphasis is placed on geographic models and their applications.

WORLD HISTORY

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	2080/2085	None

This course surveys world history from the origins of civilization through the present. This course highlights the nature of changes inside global frameworks along with their causes and consequences. This course requires extensive outside reading.

WORLD LANGUAGES

CHINESE I

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7200/7205	None

This is the first year introduction to the modern Chinese language. The major goal of this course is to introduce elementary Mandarin pronunciation, grammar and orthography (in both Romanized and character forms) to beginners with no exposure to the language. This course consists of lectures every week, plus recitation practices on a daily basis.

CHINESE II

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	7600/7605	Chinese I

This course builds upon the fundamentals established in Chinese I. Students will expand their knowledge and application of Mandarin vocabulary, grammar and orthography (in both Romanized and character forms). Chinese II consists of lectures every week, plus recitation practices on a daily basis with Chinese native speakers. Over the course of the year, those who have completed the course will have acquired the skills in the following areas: Conversation, Reading and Listening, and Character recognition.

CHINESE III

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	7610/7615	Chinese II

This course builds upon the fundamentals and solid foundation established in Chinese I and II. Students will utilize their knowledge and application of Mandarin vocabulary, grammar and orthography (in both Romanized and character forms), to apply it to literature, and written concepts.

SPANISH I

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
9, 10, 11, 12	1.0	7000/7005	None

This course stresses the mastery of basic conversational Spanish through the skills of listening, speaking, reading, and writing. Videos and materials from Latin America provide practice in using the Spanish language. Students will also be exposed to Spanish culture.

SPANISH II

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
10, 11, 12	1.0	7020/7025	Spanish I

This course reviews all grammatical forms studied in Spanish I. In addition, verb forms and a wider variety of vocabulary will be studied, along with the countries of Latin America. Increased emphasis will be placed on conversation, as well as expanding the student's writing in Spanish. Class is conducted mainly in Spanish.

SPANISH III

<i>Grades</i>	<i>Credit</i>	<i>Course Number</i>	<i>Prerequisites</i>
<i>10, 11, 12</i>	<i>1.0</i>	<i>7030/7035</i>	<i>Spanish II</i>

This course reviews all grammatical forms and vocabulary studied in Spanish I and Spanish II. In addition, verb forms and a wider variety of vocabulary will be studied, along with the countries of Latin America. Increased emphasis will be placed on conversation, literature, and continuing to expand the student's ability to write in Spanish. Class is conducted in Spanish.