2024-2025 High School
Academic Course Catalog

"Inspiring lives of character and service, through college preparatory academics, integrated with a Christian faith perspective, in a community distinguished by grace."

-BCA's Mission Statement

BRADFORD CHRISTIAN ACADEMY HIGH SCHOOL PROFILE

Victoria Kennedy Head of School
Rose Maria Redman Principal
Alexander Burgess College Advisor

Bradford Christian Academy, an independent faith-based day school founded in 2004, comprises a lower school (K-5) in Haverhill, Massachusetts, and middle and upper schools (6-12) in Lawrence, Massachusetts. BCA's campuses are 30-35 miles north of Boston and serve students in the Merrimack Valley region of northeastern Massachusetts and southern New Hampshire. The upper school is a college preparatory high school (9-12) characterized by academic rigor, a diverse student body, and the integration of faith and learning.

Accreditation: New England Association of Schools and Colleges CEEB Code: 220206

POPULATION

High School Enrollment (9-12): 78 Total School Enrollment (K-12): 187

Student/Faculty Ratio: 7 to 1 Average Class Size: 13

Students Receiving Need-Based Aid – 50-60%

Race and Ethnicity in BCA's High School – 2023-24

White – 43%, Latino – 31%, Black – 20%, Asian – 4%, Other/Not specified – 1%

ATHLETICS

Bradford Christian Academy is a member of the New England Preparatory School Athletic Council (NEPSAC) and offers the following sports: Soccer, Cross Country, Basketball, and Track & Field. Athletic participation is optional, but over 60% of students choose to participate.

ARTS

The arts are highly valued at Bradford. Performing and visual arts are offered in coursework and through extracurricular opportunities. Atelier Art, a rare technical and historic drawing and painting technique, is offered to high school students. Students can also participate in musical theatre, competition theatre at the Massachusetts Educators Theatre Guild competition, dance, chorus, band, jazz band, and yearbook. Over 60% of our student body participates in the visual and performing arts.

ACADEMICS

25 college preparatory academic courses and 9 honors/advanced level courses offered this year.

8 AP classes offered this year. (13 AP total courses offered in a student's high school career.)

The academic curriculum at BCA is rigorous. BCA became an official AP Capstone school in the 2018-19 school year. Students are required to take a full credit of theology for each year they are enrolled at BCA, and this effectively adds an additional research and writing class to their overall course load. BCA is phasing out honors level classes and implementing honors options within courses. Some advanced courses in Math and Science will remain. Honors classes were offered to the current graduating class of 2023 since Grade 9. Grade 11 and 12 students can take 3 or 4 AP courses per year, depending on scheduling. Classes have a block scheduling format, with 90-minute blocks every other day from Tuesday through Friday and 45-minute half-blocks on Monday. Bradford values a liberal arts education, classic literature, technical competency in language arts and mathematics, global studies, and excellent communication skills. Students learn effective expression of ideas by developing strong, clear writing, speaking, rhetoric, and logic skills that thoroughly prepare them for college, career, and service in today's world.

STRENGTH OF PROGRAM

Strength of program is determined by the number of honors/advanced/AP courses taken. Students with coursework considered "Most Demanding" have taken the highest level of every course offered and substantially exceeded minimal graduation requirements. "Very Demanding" means a student took mostly Honors courses and some AP classes. "Demanding" indicates a mix of Honors and College Preparatory courses. "Average" reflects a mostly college preparatory course load to meet the minimum graduation requirements, with little or no honors/advanced/AP classes.

ACADEMIC REQUIREMENTS

Bradford Christian Academy requires 24/25 total credits. Students must serve 15 community service hours every year.

Subject	Credits Required for Graduation
Biblical Studies and Theology	4 (or 1 credit for each year enrolled at BCA)
English	4
Mathematics	4
Science	3
Social Studies	3
Ancient/Modern Languages	3
Fine Arts/Technology/Phys. Ed.	1
Electives	3 (Only 2 are required senior year for students taking 3 or more AP classes.)

GPA & CLASS RANK

Grade Point Average is unweighted.

BCA does not report class rank, but valedictorian and salutatorian honors are conferred.

Letter	Number	Grade Point	Letter	Number	Grade Point
A+	97-100	4.0	C+	77-79	2.3
A	93-96	4.0	C	73-76	2.0
A-	90-92	3.7	C-	70-72	1.7
B+	87-89	3.3	D+	67-69	1.3
B	83-86	3.0	D	65-66	1.0
B-	80-82	2.7	F	64 & below	0.0

ADVANCED PLACEMENT RESULTS

May 2023 AP Exams

25 students sat for 42 AP exams.
67% of exams received scores of 3 or higher. (2022 – 58%; 2021 – 63%)

With the May 2023 AP exam administration, the following awards were achieved:

AP Capstone Diploma – 2 students
AP Scholar with Distinction – 5 students
AP Scholar with Honor – 1 student
AP Scholar – 4 students

May 2022 AP Exams

24 students sat for 52 AP exams. 58% of exams received scores of 3 or higher. (2021 – 63%)

With the May 2022 AP exam administration, the following awards were achieved:

AP Capstone Diploma – 1 student
AP Scholar with Distinction – 4 students
AP Scholar with Honors – 2 students
AP Scholar – 6 students

POST HS PLACEMENT FOR THE CLASSES OF 2021, 2022, & 2023 – 55 graduates

4-Year College – 83.6% (46 of 55)
2-Year College – 7.2% (4 of 55)
Technical/Vocational School – 1.8% (1 of 55)

Gap Year or Employment – 7.2% (4 of 55)

FOUR-YEAR COLLEGE ACCEPTANCES FOR THE CLASSES OF 2021, 2022, & 2023

Adelphi University
Arizona State University
Auburn University
Barry University
Bentley University
Boston College
Bridgewater State University
Brown University
Bryant University
Case Western Reserve University
Cedarville University
Charleston Southern University
Chapman University
Clarks Summit University
Clarkson University
Coastal Carolina University
Colby-Sawyer College
College of the Holy Cross
College of William and Mary
Colorado State University
Dean College
Drexel University
Eastern Nazarene College
Elms College
Emerson College
Emmanuel College
Fisher College
Florida Atlantic University
Fitchburg State University
Framingham State University
Gordon College
Grove City College
Hampton University
Hawaii Pacific University
Hofstra University
Houghton University
Keene State College
Lasell University
Liberty University
Massachusetts College of Art and Design
Massachusetts College of Liberal Arts
Merrimack College
Messiah University
Nichols College
Norfolk State University
Northeastern University
Northwestern University
Palm Beach Atlantic University
Pennsylvania State University
Plymouth State University
Quinnipiac University
Regis College
Ringling College of Art & Design
Rivier University
Rochester Institute of Technology
Roger Williams University
Saint Anselm College
Saint Louis University
Saint Michael's College of Vermont
St. John's College, Maryland
Salem State University
Savannah College of Art and Design
Siena College
Simmons University
Southern New Hampshire University
Springfield College
State University of New York College of Environmental Science and Forestry
Stonehill College
Suffolk University
University of Connecticut
University of Delaware
University of Maine
University of Massachusetts Amherst
University of Massachusetts Boston
University of Massachusetts Dartmouth
University of Massachusetts Lowell
University of New Hampshire
University of New Haven
University of North Carolina at Chapel Hill
University of Rhode Island
University of Rochester

University of Tampa
Vermont State University – Castleton
Virginia Union University
Wheaton College (MA)
Westfield State University
Worcester State University
University of Vermont
Virginia Commonwealth University
Wheaton College (IL)
Western New England University
Worcester Polytechnic Institute
Yale University

RECOGNITION

Niche.com ranks Bradford Christian Academy as following:
Best Private K-12 Schools in America – 630 of 3,142
Best Christian High Schools in America – 234 of 2,500
Best Christian High Schools in Massachusetts – 6 of 18
Best Private High Schools in Massachusetts – 68 of 114
Most Diverse Private High Schools in Massachusetts – 43 of 113

Advanced Placement Capstone Diploma: BCA became an AP Capstone School in the 2018-19 school year. Recognized as one the most academically challenging high school courses of study, the AP Capstone Diploma requires students to take six AP classes and receive a score of 3, 4, or 5 on all six AP exams. Students must take AP Seminar and AP Research along with four additional AP courses of the students' choice.

AP Seminar
GRADE: 10 & 11 **CREDITS: 1.0**

In this seminar-style class, students will receive an introduction to conducting independent analysis of complex ideas across various disciplines. This will be done via discussions on a wide variety of primary source literature revolving around the topics of God, human nature, community, and technology from both Eastern and Western, as well as religious and secular perspectives. Students will synthesize information from these different sources and formulate research questions based on these source materials. They will elaborate on these ideas through essays, oral presentations, and team projects. The goal of the class is to provide students with the tools to evaluate information accurately and make compelling, evidence-based arguments. This course is part of the AP Capstone diploma program, and is a prerequisite for AP Research while also satisfying the biblical studies requirement for junior year.

AP Research
GRADE: 12 **CREDITS: 1.0**

AP Research is the second class required for the AP Capstone Diploma. In this class students build on their AP Seminar experience and focus on a singular academic topic of interest. Students design, plan, and implement a year-long investigation, learning research methodology, employing ethical research practices, analyzing and synthesizing their information. The course culminates in an academic paper of 4,000 - 5,000 words with an accompanying performance,

exhibit, or product and a presentation with an oral defense. AP Seminar is a prerequisite for AP Research.

Internships

BCA seniors are eligible for participation in several on-campus internship opportunities, allowing them to work closely with staff members to develop critical professional skills and try their hand at various leadership tasks. Students are required to submit the following to be considered:

Cover Letter

The cover letter portion must include the following:

- the title of the internship for which you are applying
- why your specific skills/experience/interests qualify you for the internship
- how the named internship fits into your academic and/or career goals

Each internship will be a half semester, and will count for .5 credit hours. The time commitment will be typically during the school day for a minimum 180 minutes a week. Internship mentors will assess students based on a rubric in order to give a grade at the end of the quarter.

Current In-House Internships available to BCA seniors with staff approval include:

Leadership Internship: a crash-course in systems-level problem solving, culminating in students' creation of an on-campus, student-led initiative.

Athletic Internship: working closely with the Athletic Director, students get hands-on experience in team management, physical education classes, and athletic training.

Marketing Internship: under the guidance of school staff, students create original marketing materials, emphasizing digital and social media marketing tools.

Technology Internship: students tackle the many forms of digital equipment on site at BCA, helping to troubleshoot and manage tech in the building from stage lighting, to sound systems, to classroom learning devices, to computers.

Teaching Internship: students will work with one of our Lower School teachers as an aide in the classroom.

Ministry Internship: students will assist the School Chaplain in coordinating and implementing the Chapel program and other ministry programs.

Curriculum Requirements by Department

Biblical and Theology Studies

Grade 9	Introduction to Biblical Studies
Grade 10	New Testament Survey
Grade 11	Old Testament Survey or AP Seminar
Grade 12	Christian Thought

Diploma: Must complete a Bible and Theology course for each year enrolled at BCA, and one course must be Christian Thought.

Departmental Honors: *Must complete the Deeper Dive option for Christian Thought. For Class of 2025 and earlier, must also complete AP Seminar.*

English

Grade 9	English I
Grade 10	English II or AP Seminar
Grade 11	English III: American Literature *OR* AP English Language and Composition
Grade 12	English IV: World Literature *OR* AP English Literature and Composition
Electives:	Creative Writing, Preparing for College, Contemporary Writers

Diploma: Must complete four English courses.

Departmental Honors: *Must complete AP Seminar, AP English Language, and AP English Literature while maintaining a cumulative GPA of at least 3.7 within the English department with no lower than an A- in any class.*

Mathematics	**Standard Sequence**	**AP Calculus Sequence**
Grade 9	Algebra I	Geometry Honors
Grade 10	Geometry	Algebra II Honors
Grade 11	Algebra II	PreCalculus Honors
Grade 12	PreCalculus *OR* an Elective	AP Calculus AB
Electives:	Quantitative Reasoning, Honors Statistics	

Diploma: Must complete four courses including Algebra II.

Departmental Honors: *Must complete AP Calculus while maintaining a cumulative GPA of at least 3.7 within the math department, with no lower than a B in any class.*

Science

Grade 9	Biology
Grade 10	Chemistry *or* Chemistry Honors
Grade 11	Physics Honors *or* a Laboratory Science Elective
Grade 12	Electives: Environmental Science, Anatomy & Physiology, AP Biology AP Physics C: Mechanics

Diploma: Must complete Biology, Chemistry, and either Physics or another Laboratory Science.

Departmental Honors: *Must complete a Physics H course and at least one AP Science course (AP Computer Science is included) while maintaining a cumulative GPA of at least 3.7 within the science department, with no lower than a B in any class. If more than one AP Science course is taken, only the one with the higher grade is counted for this GPA calculation.*

Social Studies

Grade 9	Ancient and Classical Civilizations *and* Medieval and Early Modern World
Grade 10	Late Modern World *and* History of the Americas through 1776
Grade 11	United States History I and II *or* AP United States History
Grade 12	Electives: History of the Arts, History of Science, AP European History, Psychology

Diploma: Must complete three years including United States History.

Departmental Honors: *Must complete AP United States History while maintaining a cumulative GPA of at least 3.7 within the Social Studies department with no lower than an A- in any class.*

World Language

Grade 9	Spanish I / Spanish II
Grade 10	Spanish II / Spanish III
Grade 11	Spanish III / Spanish IV
Grade 12	Spanish IV / AP Spanish Language
Electives:	Advanced Spanish

Diploma: Must complete at least three years of high school Spanish.

Departmental Honors: *Must complete AP Spanish Language and Culture course and maintain a minimum cumulative average of a B in all high school Spanish courses.*

****BCA reserves the right to cancel any course due to low student enrollment.***

BIBLICAL & THEOLOGICAL STUDIES

Introduction to Biblical Studies
GRADE: 9 CREDITS: 1.0

Introduction to Biblical studies is the first part of a three-year biblical studies sequence, and lays the foundation for the biblical studies curriculum at BCA. Students will begin their year with a survey of the Bible's storyline, which will serve as a review for students matriculating from BCA's middle school and an introduction for those matriculating from elsewhere. This survey will be centered around the idea of the Bible as a unified story centered on Jesus, and will follow Carol Kaminski's CASKET EMPTY model for summarizing this storyline chronologically. Students will then spend the rest of the year learning critical biblical interpretation skills following the model of the Interpretive Journey from Duvall and Hays' *Grasping God's Word*. These skills will include methods for studying the historical, literary, and biblical context of a passage, as well as how to properly use study tools such as Bible dictionaries, concordances, and commentaries. Students will also learn the basics of correct Bible application, while avoiding unhelpful habits like spiritualizing and allegorizing, and be given ample and repeated opportunity to rightly apply principles distilled from texts to everyday life. They will also survey the literary genres of the Bible, gaining insight into unique skills needed to interpret different parts of the Bible. While learning these skills, students will also complete a survey of the historical books in the Old Testament, using passages from this corpus to sharpen these skills. This year will culminate in an interpretive paper that will showcase the interpretation and application skills that students have gained during the course.

New Testament Survey
GRADE: 10 CREDITS: 1.0

New Testament Survey is the second part of a three-year biblical studies sequence, and will consist of a complete survey of the New Testament. Students will build upon their knowledge of the Old Testament historical books, which will have been surveyed the year prior, and follow first the historical narrative of the time between the testaments. They will then follow the narrative of the Bible as it unfolds in the four Gospels and in the book of Acts, and complete this survey with detailed study of the epistles and the book of Revelation. Time will then be given for students to weigh different models for understanding the Bible's unity. Students will be given the opportunity to showcase the interpretive and personal life application skills learned during Introduction to Biblical Studies through class discussions, exercises, and interpretive papers.

Old Testament Survey
GRADE: 11 CREDITS: 1.0

Old Testament Survey is the third part of a three-year biblical studies curriculum, and will complete their study of the Old Testament. Students will continue their survey of the Old

Testament, which began with their survey of the Old Testament historical books in Introduction to Biblical Studies with a survey of the non-narrative portions of the Pentateuch, with an emphasis on weighing critical theories of authorship and interpreting and applying challenging texts such as Old Testament laws and genealogies. They will then give some attention to the alternative history of Israel in the Book of Chronicles and its unique perspective, as well as the Hebrew short stories of Ruth and Esther. Time will then be devoted to learning the basics of understanding Hebrew poetry, after which students will conduct a thorough study of the Psalms, with attention paid to how understanding the Psalms helps one practice Christian spirituality in all walks of life. This will be followed by study of the wisdom literature, with attention paid to how the wisdom literature gives both practical life guidance while also providing space for processing difficult situations and questions. Students will then complete the course with a thorough study of the Old Testament prophets, with a view towards how they navigate the difficult balance between seeking justice and embodying forgiveness. Along the way, they will be given the opportunity to showcase the interpretive and personal life application skills learned during Introduction to Biblical Studies through class discussions, exercises, and interpretive papers.

Christian Thought
GRADE: 12 CREDITS: 1.0

Christian Thought is designed to serve as a summative experience for students' study of biblical and theological studies at BCA, where students will be called to articulate their worldview and religious beliefs prior to going off to college. They will begin this process by thinking about what theology is, and how all people have a theology that affects their lives, whether they can articulate it or not. They then will do a brief comparative study of the four other major religious worldviews of the globe: Islam, Hinduism, Buddhism, and Judaism, with the goal of understanding how these are distinct from the Christian viewpoint on life. Students then will study Christian theology, including Christian beliefs about the Bible, God Himself, humanity, sin, the person and work of Jesus Christ, salvation, the Holy Spirit, the church, and the age to come, while writing their own personal statement of faith.

ENGLISH

English I
GRADE: 9 CREDITS: 1.0

English Composition I is an introductory upper school composition course. Students will explore the fundamentals of textual analysis and practice expository, persuasive, and creative forms of composition and learn the basic guidelines for academic research and citation. Students will develop critical thinking, strong writing, and presentation skills. Overall, English Composition I seeks to introduce how the art of reading and writing can enrich human conversations about God, purpose, meaning, and value.

English II or AP Seminar
GRADE: 10 CREDITS: 1.0

English Literature I is an introductory upper school literature course. Students will learn standard literary terms and concepts in order to analyze literary texts thoroughly and critically. Students will explore a wide variety of literary genres such as poetry, drama, short fiction, and novels. Overall, English Literature I seeks to introduce how works of literature can shape and enrich human conversations about God, purpose, meaning, and value.

AP Seminar
GRADE: 10 CREDITS: 1.0

In this seminar-style class, students will receive an introduction to conducting independent analysis of complex ideas across various disciplines. This will be done via discussions on a wide variety of primary source literature revolving around the topics of God, human nature, community, and technology from both Eastern and Western, as well as religious and secular perspectives. Students will synthesize information from these different sources and formulate research questions based on these source materials. They will elaborate on these ideas through essays, oral presentations, and team projects. The goal of the class is to provide students with the tools to evaluate information accurately and make compelling, evidence-based arguments. This course is part of the AP Capstone diploma program, and is a prerequisite for AP Research while also satisfying the biblical studies requirement for junior year. It is also a requirement for departmental honors in biblical and theological studies.

AP English Language and Composition
GRADE: 11 CREDITS: 1.0

AP Language and Composition is a year-long course that cultivates the reading and writing skills that students need for college success and intellectually responsible civic engagement. The course guides students in becoming curious, critical, and responsive readers of diverse texts and becoming flexible, reflective writers of texts addressed to diverse audiences for diverse purposes. The reading and writing students do in the course should deepen and expand their understanding of how written language functions rhetorically: to communicate writers' intentions and elicit readers' responses in particular situations.

English III: American Literature
GRADE: 11 CREDITS: 1.0

English III is a college-preparatory composition course that mirrors much of the structure and substance of AP English Language and Composition (see description above).

AP English Literature and Composition
GRADE: 12 CREDITS: 1.0

AP English Literature and Composition is an introductory college-level literary analysis course. Students will analyze texts critically while employing important literary concepts such as character, setting, structure, perspective, and figurative language. Students will explore literary genres from various cultures, times, and places. Overall, AP English Literature seeks to demonstrate how literature shapes and enriches human conversations about God, purpose, meaning, and value. (Adapted from College Board)

English IV: World Literature
GRADE: 12 CREDITS: 1.0

English Literature II is a college-preparatory literary analysis course that mirrors much of the structure and substance of AP English Literature and Composition (see description above).

Preparing for College
GRADE: 11 CREDITS: 0.5

Preparing for College focuses primarily on improving the SAT test scores for each individual student. Preparing for College utilizes the resources of the college readiness software company Naviance to prepare students for the SAT Reasoning Test in the spring of their junior year and the fall of their senior year. To prepare for the math section, students will review basic algebra, problem solving, data analysis, and complex equations. For the language sections, students will improve in their use of evidence, contextual vocabulary, document analysis, ability to express ideas, and knowledge of conventional English. Some attention will also be paid to informing students about the SAT Subject Tests, the ACT, and other testing options for college admission. Additionally, students will create their college lists, write their college essays, including multiple iterations, and prepare for college interviews.

Creative Writing
GRADE: 12 CREDITS: 1.0

Creative Writing is an introductory elective that explores different forms of creative written expression. Students will learn the particulars and functions of different modes of creative writing, from fiction, to poetry, to nonfiction, while employing important literary concepts such as character, setting, structure, perspective, and figurative language in their own weekly and longer-term projects. Through the study of texts and frequent journaling, students will explore literary genres from various cultures, times, and places. Overall, Creative Writing seeks to demonstrate how everyone has a unique and creative power to express themselves, in a way that activates the imagination and enriches human community.

Contemporary Writers
GRADE: 12 CREDITS: 1.0

This elective course is designed to broaden students' knowledge of contemporary writers, while developing their own voices through discussion and a variety of writing assignments. A minimum of four novels will be read during this course.

MATHEMATICS

Standard Sequence

Algebra I
GRADE: 9 CREDITS: 1.0

Students in Algebra I will learn the universal language of higher mathematics. Topics include modeling relationships with variables, expressions and equations, graphing and solving systems of equations and inequalities, exponents and exponential functions, polynomials and factoring, quadratic equations and functions, and radical expressions and equations. Students will learn to effectively read, speak, and think algebraically. Real world activities and examples will engage students in critical thinking, reasoning, and error analysis. Test taking strategies will be incorporated to prepare students for the SAT. Throughout the year, the teacher will provide numerous examples and continuously check for understanding. A scientific calculator is required (TI-30XIIS recommended).
Prerequisite: Pre-Algebra

Geometry
GRADE: 10 CREDITS: 1.0

Geometry students will discover the tools of geometry, methods of reasoning, proof and construction, while maintaining previous mathematical and algebraic skills. Students will keep a glossary of definitions, postulates, axioms, and theorems and build a vast knowledge of geometric principles. Students will learn to recognize, apply, and interpret these principles using real world examples. Students will explore properties of lines, triangles, quadrilaterals, similarity, right triangles, trigonometry, circles, transformations, and more. Test taking strategies will be incorporated to prepare students for the SAT. Throughout the year the teacher will provide numerous examples and continuously check for understanding. A scientific calculator is required (TI-30XIIS recommended).
Prerequisite: Algebra I

Algebra II
GRADE: 11 CREDITS: 1.0

Algebra II is a basic course structured to meet the needs of the college-bound student. Algebra II Honors is rigorous and fast paced. Topics include functions, linear systems, matrices, quadratics, polynomials, radicals, exponents, rational functions, probability, statistics, and trigonometry. Both new guidelines and traditional skills are incorporated. A focus on real-world connections brings math to life. Key skills, ample practice, and reteaching will support students to ensure mastery. Proper use of math vocabulary will be carefully developed as students learn a variety of techniques to help them become more effective readers of math materials. Reading comprehension activities and test taking strategies will be incorporated throughout the year to prepare students for the SAT. A scientific calculator is required (TI-30XIIS recommended).
Prerequisite: Geometry

Precalculus Honors
GRADE: 12 CREDITS: 1.0

Precalculus is a rigorous course for the serious math student. Students explore functions and their graphs in great detail. Such functions include polynomial, power, rational, exponential, logistic, logarithmic, and trigonometric functions. Students discover the power of analytic trigonometry, systems and matrices, analytic geometry in two and three dimensions, and discrete mathematics. A brief introduction to limits and continuity prepares students for Calculus. A multi-pronged approach is used throughout the course with concepts, results, and problems being expressed graphically, numerically, analytically, and verbally. Both a scientific calculator (TI-30XIIS recommended) and a graphing calculator (TI-83/84 highly recommended) are required. Students will be introduced to the use of graphing calculators to reinforce the multiple representations of functions and to explore new and complicated concepts. This course is the foundation and prerequisite for AP Calculus AB.
Prerequisite: Algebra II

Quantitative Reasoning
GRADE: 12 CREDITS: 1.0

In this course students will review important concepts in Algebra 1, Geometry, and Algebra 2.
Prerequisite: Algebra II

Statistics Honors
GRADE: 12 CREDITS: 1.0

Statistics is designed to introduce the methods used in the field of applied statistics and probability. Emphasis is given to basic concepts and techniques for collecting and analyzing data, drawing conclusions, and making predictions. The major focus of this course is to provide

students with experience in using and interpreting data to solve real-world problems across a variety of disciplines with mathematical models.
Prerequisite: Algebra II
AP Calculus Sequence

Geometry Honors
GRADE: 9 CREDITS: 1.0

Geometry students will discover the tools of geometry, methods of reasoning, proof and construction, while maintaining previous mathematical and algebraic skills. The honors course will move at an accelerated pace, cover greater depth and breadth of material, and provide more challenging assessment. Students will keep a glossary of definitions, postulates, axioms, and theorems and build a vast knowledge of geometric principles. Students will learn to recognize, apply, and interpret these principles using real world examples. Students will explore properties of lines, triangles, quadrilaterals, similarity, right triangles, trigonometry, circles, transformations, and more. Test taking strategies will be incorporated to prepare students for the SAT. Throughout the year the teacher will provide numerous examples and continuously check for understanding. A scientific calculator is required (TI-30XIIS recommended).
Prerequisite: Algebra I in 8th grade

Algebra II Honors
GRADE: 10 CREDITS: 1.0

Algebra II is a basic course structured to meet the needs of the college-bound student. The honors course will move at an accelerated pace, cover greater depth and breadth of material, and provide more challenging assessment. Topics include functions, linear systems, matrices, quadratics, polynomials, radicals, exponents, rational functions, probability, statistics, and trigonometry. Both new guidelines and traditional skills are incorporated. A focus on real-world connections brings math to life. Key skills, ample practice, and reteaching will support students to ensure mastery. Proper use of math vocabulary will be carefully developed as students learn a variety of techniques to help them become more effective readers of math materials. Reading comprehension activities and test taking strategies will be incorporated throughout the year to prepare students for the SAT. A scientific calculator is required (TI-30XIIS recommended).
Prerequisite: Geometry Honors

PreCalculus Honors
GRADE: 11 & 12 CREDITS: 1.0

Precalculus is a rigorous course for the serious math student. Students explore functions and their graphs in great detail. Such functions include polynomial, power, rational, exponential, logistic, logarithmic, and trigonometric functions. Students discover the power of analytic trigonometry, systems and matrices, analytic geometry in two and three dimensions, and discrete mathematics. A brief introduction to limits and continuity prepares students for Calculus. A multi-pronged approach is used throughout the course with concepts, results, and problems being expressed graphically, numerically, analytically, and verbally. Both a scientific

calculator (TI-30XIIS recommended) and a graphing calculator (TI-83/84 highly recommended) are required. Students will be introduced to the use of graphing calculators to reinforce the multiple representations of functions and to explore new and complicated concepts. This course is the foundation and prerequisite for AP Calculus AB.
Prerequisite: Algebra II Honors

AP Calculus AB
GRADE: 12 CREDITS: 1.0

AP Calculus AB is an introductory college-level calculus course. Students cultivate their understanding of differential and integral calculus through engaging with real-world problems represented graphically, numerically, analytically, and verbally and using definitions and theorems to build arguments and justify conclusions as they explore concepts like change, limits, and the analysis of functions. Both a scientific calculator (TI-30XIIS recommended) and a graphing calculator (TI-83/84 highly recommended) are required. This course culminates with the AP Exam in May.
Prerequisite: Precalculus Honors

SCIENCE

Biology
GRADE: 9 CREDITS: 1.0

This course explores the science of life from the global to the microscopic. We will gain an understanding of the fundamental biology common to animals and plants, with an emphasis on the biochemistry needed for cell function, cellular structure and function, genetics, ecology, and the taxonomy, structure, and function of the major kingdoms or organisms on earth. A scientific calculator is required.

Chemistry
GRADE: 10 CREDITS: 1.0

This course will give the student an overview of general chemistry. It will give a perspective of atomic and molecular structure as it relates to the structure of ionic and covalent bonds. Formulas and equations will be presented in a context where students will predict reactions. The kinetic theory, the basis of modern chemistry, is used to explain gas volume, pressure and temperatures as well as rates of chemical reactions. Thermodynamics is studied to explain energy transformations and spontaneity of chemical reactions. Acid/base theory, chemical equilibrium, and rates of reactions are emphasized. A scientific calculator is required.

Chemistry Honors
GRADE: 10 CREDITS: 1.0

This course will give the student an overview of general chemistry. The honors course will move at an accelerated pace, cover greater depth and breadth of material, and provide more challenging assessment. It will give a perspective of atomic and molecular structure as it relates to the structure of ionic and covalent bonds. Formulas and equations will be presented in a context where students will predict reactions. The kinetic theory, the basis of modern chemistry, is used to explain gas volume, pressure and temperatures as well as rates of chemical reactions. Thermodynamics is studied to explain energy transformations and spontaneity of chemical reactions. Acid/base theory, chemical equilibrium, and rates of reactions are emphasized. A scientific calculator is required.

Physics Honors
GRADE: 11 & 12 CREDITS: 1.0

Students explore the basic concepts of Newtonian mechanics (which includes motion, forces, energy, momentum, gravity, and rotational motion), fluid mechanics, wave phenomena, electricity and circuits, and modern physics. The emphasis is on concept development, multiple approaches to problem solving, and using technology to acquire and analyze data. Either a scientific calculator or a graphing calculator is required.
Prerequisite: Algebra II (exceptions made at the teacher's discretion), and Precalculus is a recommended corequisite, although it is not required

AP Physics C: Mechanics
GRADE: 12 CREDITS: 1.0

AP Physics C: Mechanics is a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in one of the physical sciences or engineering. Students cultivate their understanding of physics through classroom study and activities as well as hands-on laboratory work as they explore concepts such as kinematics; Newton's laws of motion; work, energy and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. This course culminates with the AP Exam in May.
Corequisite: AP Calculus AB
Prerequisite: Physics Honors (exceptions made at the teacher's discretion)

Anatomy & Physiology Honors (Offered Alternate Years)
GRADE: 11 & 12 CREDITS: 1.0

This course explores the biology of the human body, including anatomy (the structure and shape of the body and its parts) and physiology (how the body and its parts work or function). Students will look at all the major body systems and how they relate to each other. Anatomy & Physiology

is a course designed for students who would like to pursue a career in the medical or life science areas, or who want to learn more about their bodies. The course involves the study of the mammalian body structure and the body's basic physiological functions. Emphasis will be placed on problem solving, understanding the body, and experimental design. The students apply their classroom knowledge in laboratory exercises and required dissections.

AP Biology (Offered Alternate Years)
GRADE: 11 & 12 CREDITS: 1.0

This is a college level course that will prepare the student to take the required Advanced Placement test in May. Emphasis will be placed on problem solving, understanding the natural world, and experimental design. This course is equivalent in scope and difficulty to a first-year college course in general biology for science majors. It is designed both for non-majors, who want to complete a college-level science course while in upper school, and for biology majors, seeking to strengthen their biology fundamentals. This course will rely heavily on experiential learning and students should expect both lab work and field work. Students taking this course should plan to take the Advanced Placement Biology test in May.

Environmental Science
GRADE: 11 & 12 CREDITS: 1.0

This course is an upper level course, aimed at juniors and seniors, that stresses basic understanding of environmental science and the application of this knowledge with respect to life on earth. An understanding of life and how various living organisms carry on life activities in the natural world is also stressed. Biology, evolution, and ecology are among some of the topics covered.

SOCIAL STUDIES

Pre-Modern World History
GRADE: 9 CREDITS: 1.0

This is the first year of the two-year World History course. This class studies the development of civilizations of the major regions of the world, with a primary focus on the eastern hemisphere. Topics include Ancient Egypt,
the classic periods of Greece, Rome and China, medieval institutions and concepts and the clashing of civilizations as demonstrated in the Crusades, and the rise of modern thought from the Renaissance in Europe. This class will also emphasize the development of critical thinking skills and strong writing and presentation skills.

Modern World History
GRADE: 10 CREDITS: 1.0

This class is the second of a two-year World History course that begins with a brief review of the rise of modern thought in the Renaissance and ends with an in-depth study of world history through the 21st century. The course focuses on European commercial and colonial expansion throughout the globe, the modernization of European society from the age of exploration, the rise of merchant capitalism, the urbanization and mass production of the Industrial Revolution, and the contributing factors leading to the French Revolution. The course shows the encounters between modernizing Europe and other parts of the world, through trade, conquest and cultural interaction. Students will be asked to think comparatively and analytically, addressing essential questions posed by both academic historical inquiry and theological reflection. There will be a special emphasis on development of good reasoning and writing skills.

United States History
GRADE: 11 & 12 CREDITS: 1.0

This course provides an overview of United States history from the voyages of exploration to the post-Cold War era. In the first semester, instruction focuses on the period of colonization, the revolution and establishment of the new Republic, the rise of sectionalism, and the Civil War. In the second semester the course covers the rise of American industry and cities, America as a global power, World War I, the 1920s, the Great Depression and World War II, the Cold War, civil rights, and the post-Cold War era. United States History is a graduation requirement, generally taken in the junior year

AP United States History
GRADE: 11 & 12 CREDITS: 1.0

Advanced Placement United States History is a college-level introductory survey course of American history. The course will provide students with a better understanding of the United States, including its origins, development and contemporary issues. The class will focus on themes, such as the evolution of American democracy and its political structures as well as the diverse ethnic, cultural, and religious streams that have shaped American society. The course will emphasize the development of critical thinking, reading, and writing skills. It will also introduce students to important issues in American historical scholarship and historiography. The course culminates in the AP Exam in May.

Introduction to Psychology

GRADE: 11 & 12 CREDITS: 1.0

This course covers core concepts in psychology beginning with the use of the scientific method in research and the physiological basis for behavior. Topics covered include social psychology, perception, states of consciousness, memory and learning, as well as human growth and development, personality, stress, and adjustment. Class time is divided between lecture, films, discussions, experiments, and demonstrations.

MODERN LANGUAGES

Spanish I
GRADE: 9 CREDITS: 1.0

Spanish I is an introductory course for true novice Spanish students. This course is based on authentic texts in the target language that help to build proficiency to prepare students for real-world situations. Students will be able to recognize some familiar words and phrases when they listen and read in Spanish. They will be able to discuss and present memorized and practiced information about familiar topics. In Spanish I, students will gain familiarity with the foundational grammar and conventions of the Spanish language. Students are introduced to the diverse histories, geographies, and cultures of the Spanish speaking world and build confidence speaking Spanish.

Spanish II
GRADE: 10: CREDITS: 1.0

Spanish II is a course for novice-mid to novice-high Spanish students. In Spanish II, students will read culture-based novelas that build proficiency in the target language and expose students to products, practices, and perspectives in the target culture. Building upon proficiency gained in Spanish I, Spanish II students will be able to understand familiar words, phrases, and sentences including some details when they listen and read in Spanish. They will be able to use Spanish to ask and answer simple questions about familiar topics and present basic information using phrases and simple sentences.

Spanish III
GRADE: 11 CREDITS: 1.0

Spanish III is a course for intermediate-low to intermediate-high Spanish students. In Spanish III, students will read culture-based novelas that build proficiency in the target language and expose students to products, practices, and perspectives in the target culture. Building upon proficiency gained in Spanish I and II, Spanish III students will be able to understand the main idea in short, simple messages when they listen and read in Spanish. They will be able to use Spanish to ask and answer questions about familiar topics using simple sentences and present information about most familiar topics using a series of simple sentences.

Spanish IV
GRADE: 11, 12 CREDITS: 1.0

Spanish IV is a course for intermediate-mid to advanced-low Spanish students. In Spanish IV, students will read culture-based novelas that build proficiency in the target language and expose students to products, practices, and perspectives in the target culture. Building upon proficiency gained in Spanish I, II, III, students will be able to understand the main idea in increasingly complex messages and texts when they listen and read in Spanish. They will be able to use Spanish to ask and answer questions in a conversation about a variety of topics and present information about most familiar topics using a series of increasingly complex sentence structures.

AP Spanish Language and Culture
GRADE: 11, 12 CREDITS: 1.0

AP Spanish Language and Culture is a rigorous course taught in Spanish that builds student proficiency across the three modes of communication. The course focuses on the integration of authentic resources including online print, audio , and audiovisual resources, as well as traditional print resources that include literature, essays, and articles to provide a rich, diverse learning experience. Students communicate using advanced vocabulary and linguistic structures. Students prepare for the AP Spanish Language and Culture exam in May.

TECHNOLOGY & ENGINEERING

Robotics
GRADE: 11 & 12 (9 & 10 by teacher discretion) CREDITS: 0.25

This is a hands-on robotics course using LEGO robotics materials and the Python programming language to inspire and engage STEM students. Students will learn about both computer programming and engineering design by building robots and writing programs to complete various tasks and challenges. The versatility of LEGO materials and the open-ended nature of many of the challenges and projects fosters creative thinking throughout the course.
No prior experience with robotics or computer programming is necessary.
Prerequisite: Algebra I, along with good mathematical reasoning skills

AP Computer Science A (Offered Alternate Years)
GRADE: 11 & 12 CREDITS: 1.0

AP Computer Science A is an introductory college-level computer science course that teaches object-oriented programming in Java. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore topics such as primitive types, using objects, booleans and if statements, iteration, arrays, 2D arrays, ArrayList, designing classes, inheritance, and recursion. This course culminates with the AP Exam in May. No prior experience with computer programming is necessary.
Prerequisite: Algebra I, along with good mathematical reasoning skills

Intro to Engineering
GRADE: 9, 10, 11, & 12 CREDITS: 0.25

Intro to Engineering is an elective course that introduces students to the ideas of engineering through hands-on activities. The main focus of the class will be the engineering design process (identify the problem, brainstorm ideas, design a solution, create a model, test the model, and make improvements). The course will consist mostly of hands-on in-class engineering challenges, activities, and projects, focusing on structures and devices made out of household items such as paper, cardboard, straws, paper clips, rubber bands, etc. By the end of the course, every student should understand what it means to think like an engineer on a basic level. There are no prerequisites.

STEM Enrichment
GRADE: 9, 10, 11, & 12 CREDITS: 0.25

This is an elective course for motivated students who are interested in any area of STEM to be able to pursue further study in their field(s) of interest. The specific form their study takes will be jointly determined by the student and the instructor, and is intended to be very open-ended. Some examples include learning a new programming language, developing a long-term science

experiment, designing and building an engineering project, or even just working through grade-level appropriate math competition problems. The student does not need to know ahead of time what their learning project will be; all they need is a sincere interest in one or more areas of STEM and a motivation to learn, which includes biology, chemistry, physics, math, computer science, engineering, robotics, electronics, psychology, etc. This class can be taken every year that the student wishes to take it.

PHYSICAL EDUCATION

Physical Education
GRADE: 9

Physical education is a one semester course for all freshmen. Freshmen participate in numerous team building activities and are introduced to basic skills development in different team sports. Freshmen participate in the Project Adventure curriculum and team sports/activities which emphasizes teamwork and problem solving skills.

FINE AND PERFORMING ARTS

Atelier Art Techniques
GRADE: 10, 11 & 12 **CREDITS: 1.0**

This class focuses on conveying the intensive training of classical artists to the serious art student through building skills in perspective, measurement, and values of dark and light to reproduce still lives and cast drawings and paintings. Atelier techniques were practiced for centuries by the European masters to perfect drawing and painting skills demonstrated in portrait work and landscapes. Formal art critiquing will occur with peers and by the instructor. Assignments are created so students will gain an understanding of the technical aspects of drawing with an integration of art history. Each student will be responsible for maintaining a portfolio of work and will be expected to choose and prepare work for exhibition for our school and community.

Chorus
GRADE: 9, 10, 11 & 12 **CREDITS: 0.5**

Students will learn to read musical notation and proper singing techniques as individual singers and as members of an ensemble. The class will focus on correct breathing, vowel production, posture, and performance techniques. Students will learn a cross section of vocal genres and styles. Music repertoire will cover a wide range of periods. The chorus will perform in two formal concerts: Semester 1 will culminate with the annual Christmas Concert, and Semester 2 will culminate with a spring concert. Additionally, the chorus will perform at some high chapels, such as Baccalaureate, and also at Commencement. This class fulfills the requirement for extra-curricular participation.

Jazz and Rock Band
GRADE: 9, 10, 11 & 12 CREDITS: 0.5

The curriculum is performance-based and uses contemporary Christian and secular musical arrangements as a means of developing the musical and interpersonal skills that are required by ensemble performance, including rhythm, intonation, articulation, expression, blend and balance, following the conductor, appropriate performance practice, professional standards of conduct, and teamwork. Students will routinely prepare and execute music both informally in class and at formal performances. Moreover, students will be responsible for completing regular music theory homework assignments and demonstrating their understanding through rehearsal performance and class participation, as observed by the instructor. Students will be required to participate in both a Christmas Concert and a Spring Arts Concert. Additionally, students may be asked to contribute their talents to both school Baccalaureate and Commencement and other ceremonies. Other performance opportunities will be scheduled based upon student availability.

Introduction to Drama
GRADE: 9 & 10 CREDITS: 0.5

This course provides students with the opportunity to develop dramatic and comedic performance skills. Through lectures, workshops, and individual and group assignments, students will learn the theoretical background of important dramatic movements, as well as gain practical experience in performance. Students will learn how to prepare and deliver both a comedic and dramatic monologue, as well as participate in group performances and directing. Further, students will recognize and develop an appreciation for dramatic elements seen in various public presentations.

Advanced Drama
GRADE: 10, 11 & 12 CREDITS: 0.5

This course continues to hone student skills in dramatic and comedic performance. Students in this class prepare for competition in the Massachusetts Educational Theater Guild held each March. Students will learn how to build a cohesive performance beginning with script and casting, including diction and the delivery of both comedic and dramatic monologue, and progressing to building sets, creating costumes and makeup, designing special effects, all to propel the plot of the play forward. Students will also participate in group performances and directing decisions.