

# World **MSHS COURSE CATALOG 2018-2019**

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Note: An asterisk (\*) following the course title indicates the course meets the entrance requirements for UC/CSU when passed with a grade of C or better.

# GRADUATION REQUIREMENTS

**A student of Mary Star of the Sea High School must meet the following requirements for graduation:**

1. Students must complete a minimum of 240 credits. Each core class completed with a passing grade is equivalent to 5 credits a semester.
2. Students must take one English and one Religion class each semester.
3. Any student who has not received credit for a semester class must make up the proper credit in summer school at Mary Star of the Sea High School before returning the following September.
4. Each student must complete 80 hours of Christian Service under the direction of the Christian Service director.
5. There is a \$300 per semester fee for zero period classes.

## CREDITS REQUIRED FOR GRADUATION

<b>Religion</b>	<b>4 years</b>	<b>40 credits</b>
<b>English</b>	<b>4 years</b>	<b>40 credits</b>
<b>Mathematics</b>	<b>3 years</b>	<b>30 credits</b>
<b>Social Studies</b>	<b>3.5 years</b>	<b>35 credits</b>
<b>Science</b>	<b>2.5 years</b>	<b>25 credits</b>
<b>World Languages</b>	<b>2 years</b>	<b>20 credits</b>
<b>P.E./Health</b>	<b>1 year</b>	<b>10 credits</b>
<b>Visual and Performing Arts</b>	<b>1 year</b>	<b>10 credits</b>
<b>Electives</b>	<b>3 years</b>	<b>30 credits</b>
		<b>240 credits</b>

# RELIGION DEPARTMENT

## **THE REVELATION OF JESUS CHRIST IN SCRIPTURE**

**Prerequisite:** None  
**Grade 9** 1 Year

This course gives students a general knowledge and appreciation of the Sacred Scripture through an examination of the Old Testament and New Testament. Students learn about the Bible and its value to people throughout the world. From the prophets, students learn of the awaited Messiah, and through the Gospels, they discover Jesus Christ. Through the course of study, students explore the Mystery of Jesus Christ, the Living Word of God. Through his life and message, students will understand that Jesus Christ is the ultimate revelation to us from God. *This course has been found in conformity with the Catechism of the Catholic Church and the USCCB High School Doctrinal Framework Secondary Level Protocol.*

## **JESUS CHRIST: HIS MISSION AND MINISTRY/SOURCE OF OUR SALVATION**

**Prerequisite:** None  
**Grade 10** 1 Year

This two-semester course introduces students to Jesus Christ, the Living Word and the ultimate revelation to us from God. In learning about who Jesus is, the students will also learn who he calls them to be and that for all eternity God has planned for each of us to share eternal happiness with him through the Redemption Christ won for us. Students are introduced to the meaning of discipleship and what life as a disciple entails. *This course has been found in conformity with the Catechism of the Catholic Church and the USCCB High School Doctrinal Framework Secondary Level Protocol.*

## **THE CHURCH, OUR STORY AND MEETING JESUS IN THE SACRAMENTS**

**Prerequisite:** None  
**Grade 11** 1 Year

*The Church, Our Story* provides the students a means for understanding the interrelationship of the various components of the Catholic Church. While acknowledging the importance of the historical perspective, this course emphasizes the living Church and what it is in the present moment. The purpose of *Meeting Jesus in the Sacraments* is to provide students with a deeper sense of their identity as God's beloved children and give them opportunities to experience, express, and share God's love for them in Jesus Christ. It aims to effect a spiritual conversion, or transformation, within each student. Its goal is to make each student an authentic Christian, a true follower and imitator of Christ, in family life, the workplace, the local community, and the world. *This course has been found in conformity with the Catechism of the Catholic Church and the USCCB High School Doctrinal Framework Secondary Level Protocol.*

## **MORALITY/ CHRISTIAN VOCATIONS**

**Prerequisite:**           **None**  
**Grade 12**               **1 Year**

This two-semester course focuses on discernment and decision-making using the Ten Commandments and virtues as guidelines. Students will analyze and discuss hypothetical moral dilemmas that will raise their understanding of their own ethical development and the world around them. Subsequently, specific lifestyles will be examined in order to encourage students to reflect upon the several vocations available to them: the single life, marriage, religious life and the priesthood. This course fulfills the Archdiocese of Los Angeles' requirements for Christian Morality, Social Justice and Christian Lifestyles. *This course has been found in conformity with the Catechism of the Catholic Church and the USCCB High School Doctrinal Framework Secondary Level Protocol.*

# ENGLISH DEPARTMENT

## **ENGLISH 9 \***

**Prerequisite:** None  
**Grade 9** 1 Year

Instruction in English 9 introduces students to reading and writing at the high school level. Students develop comprehension and critical thinking skills through analysis of all major literary genres. Students develop writing skills while mastering the basic principles of grammar, vocabulary building and construction of sentences, paragraphs and essays. English 9 instruction establishes appreciation for literature and grammatical competence while enhancing communication skills.

## **HONORS ENGLISH 9 \***

**Prerequisite:** HSPT Scores, 8th grade English grades.  
**Grade 9** 1 Year

Instruction in Honors English 9 introduces students to reading and writing at the high school level. Students develop comprehension and critical thinking skills through analysis of all major literary genres. Students develop writing skills while mastering the basic principles of grammar, vocabulary building and construction of sentences, paragraphs and essays. Honors English 9 establishes appreciation for literature and grammatical competence while enhancing communication skills. Honors English 9 instruction expands on the English 9 course in both depth and breadth of material covered. Levels of reading analysis and literary criticism increase significantly in Honors classes, with greater pace, rigor of grading and quantity of material covered.

## **BRITISH LITERATURE AND COMPOSITION \***

**Prerequisite:** None  
**Grade 10** 1 Year

Instruction in British Literature and Composition introduces students to the work of significant British authors and literary periods. Analysis of key novels, poetry, short stories, works of non-fiction and drama encourages students to develop comprehension and critical thinking skills. Students develop writing skills, both academic and creative, through pre-writing, drafting and editing. In particular, students must hone the persuasive essay — the core academic form of written communication. Additionally students conduct self-guided research building their ability to weigh evidence, interpret logically and argue persuasively. Major goals of this course include expanding students' understanding of Western Civilization while enhancing communication skills. Ideally British Literature and Composition envelops students in the history of the English language, preparing them to explore further how America adapts that language and literature and how this language and literature interacts with others in the world.

## **HONORS BRITISH LITERATURE AND COMPOSITION \***

**Prerequisites:** “B” in Honors English 9 or “A” in English 9; plus departmental approval.

**Grade 10**                    **1 Year**

Instruction in Honors British Literature and Composition introduces students to the work of significant British authors and literary periods. Analysis of key novels, poetry, short stories, works of non-fiction and drama encourages students to develop comprehension and critical thinking skills. Students develop writing skills, both academic and creative, through pre-writing, drafting and editing. In particular, students must hone the persuasive essay — the core academic form of written communication. Additionally students conduct self-guided research building their ability to weigh evidence, interpret logically and argue persuasively. Major goals of this course include expanding students’ understanding of Western Civilization while enhancing communication skills. Ideally British Literature and Composition envelops students in the history of the English language, preparing them to explore further how America adapts that language and literature and how this language and literature interacts with others in the world. Honors British Literature and Composition instruction expands on the British Literature and Composition course in both depth and breadth of material covered. Levels of reading analysis and literary criticism increase significantly in Honors classes with greater pace, rigor of grading and quantity of material covered.

## **AMERICAN LITERATURE AND COMPOSITION \***

**Prerequisite:**                **None**

**Grade 11**                    **1 Year**

Instruction in American Literature and Composition guides students to explore the American experience of democracy and free enterprise through the lens of significant American authors and literary periods. Analysis of key novels, poetry, short stories, works of non-fiction and drama encourages students to develop comprehension and critical thinking skills, while considering the unique character of America and Americans. Students develop writing skills through pre-writing, drafting and editing — placing most emphasis on persuasive essay writing. This course requires rigorous effort, asking students to think, work and perform at a truly college preparatory level. Using the panorama of American authors to explore the crucial elements of American culture, students hone the ability to weigh evidence, interpret logically and argue persuasively. Students read, analyze and discuss material both chronologically and thematically, coordinating whenever possible with the United States History curriculum. Major goals of this course include expanding students’ understanding of American culture, applying this understanding to the world today and enhancing overall communication skills.

## **ADVANCED PLACEMENT ENGLISH LANGUAGE AND COMPOSITION \***

**Prerequisites:** “B” in Honors British Literature and Composition or “A” in British Literature and Composition; plus departmental approval.

**Grade 11**                      **1 Year**

AP English Language and Composition is a year-long college-level course designed to advance students in their ability to develop critical thinking skills and to further gain confidence in their writing skills through the study of vocabulary, grammar review, and the writing process. This course will strengthen the effectiveness of writing through close reading and frequent practice at applying rhetorical strategies, analyzing information from source texts, and writing arguments. The student will become a critical reader of predominantly nonfiction works, including expository, argumentative, analytical, and personal texts from various authors and time periods. The emphasis of this course is to ensure that all students are familiar with the writing process and are able to write a clear, organized and interesting composition. Students will also gain confidence in their public speaking/oral presentation skills through several oral presentation projects. Students enrolled in this course are required to take the AP English Language and Composition examination in May. The student is required to complete all summer assignments, which will be collected on the first day of AP class in the fall.

## **English 12 \***

**Prerequisite:**                **None**

**Grade 12**                      **1 Year**

Through a survey of literary works of merit, students will analyze and evaluate the form, content, and contexts of the selected texts. Selections for this course will consist of varied narrative modes: novels, poetry, short fiction, nonfiction, and films from the nineteenth century to the present. Students will study, research and evaluate works of literature and related media from the perspective of the appropriate historical, philosophical, and psychological context. In accordance with the Common Core State Standards, students will develop skills of analysis and critical thinking using the selected texts, then apply these skills to writing persuasive essays supported with relevant textual evidence.

## **ADVANCED PLACEMENT ENGLISH LITERATURE AND COMPOSITION \***

**Prerequisites:**                “B” in AP English Language and Composition or “A” in American Literature; plus departmental approval.

**Grade 12**                      **1 Year**

Requiring students to think, work and perform at college level, instruction in AP English Literature and Composition prepares students to take the AP English Literature and Composition examination offered by the College Board. Passing grades on the exam afford students college credit for this course, the amount of credit varying with each university. Students hone analytical, critical and evaluative skills while reading and discussing core literary works from the AP suggested reading list or equivalent works. Students cultivate the ability to convey ideas and arguments precisely, orally and in writing advanced essays, both timed and prepared. Typical AP titles include novels, plays, poetry and non-fiction works from the Renaissance through contemporary times and are multi-cultural in origin. The AP English Literature experience strives to expand students’ understanding of enduring individual and societal conflicts, apply this understanding to the world today, and enhance overall communications skills. All students enrolled in this class are required to take the AP English Literature Examination.

# SOCIAL STUDIES DEPARTMENT

## **INTRODUCTION TO SOCIAL STUDIES**

**Prerequisite:** None  
**Grade 9** 1 Semester

This course is designed to prepare students to expand their thinking and study skills by introducing them to behavioral and social sciences. This course will touch briefly on the fields of Psychology, Sociology, Anthropology, Geography, History and the roots of modern democracy. Basic study skills are emphasized throughout the course, including note taking from text and lecture, vocabulary extension, reading comprehension, and map reading. The material in this course will enable the student to better appreciate the world's diverse cultures, as well as prepare the student for advanced course work in social studies.

## **MODERN WORLD HISTORY \***

**Prerequisite:** None  
**Grade 10** 1 Year

This course is designed to allow students to study major turning points that shaped the modern world from the Enlightenment through the present. Students consider how a modern system of communication and exchange helped form complex networks of relationships between nations and explore how people, goods, ideas, and capital were impacted by technological developments and industrialization, imperial expansion, the growth of nation-states, and the experience of "total war". Students consider the conflict between economic and political systems that impacted the post-World War II period and the emergence of new nations and political changes in the present era. Writing, research and analysis are key components, including a research essay based on a theme addressed in the course.

## **HONORS MODERN WORLD HISTORY \***

**Prerequisite:** "A" in Introduction to Social Studies and "B" or better in Honors English 9 or an "A" in English 9 and departmental approval.  
**Grade 10** 1 Year

This course is designed to allow students to study major turning points that shaped the modern world from the Enlightenment through the present. Students consider how a modern system of communication and exchange helped form complex networks of relationships between nations explore how people, goods, ideas, and capital were impacted by technological developments and industrialization, imperial expansion, the growth of nation-states, and the experience of "total war". Students consider the conflict between economic and political systems that impacted the post-World War II period and the emergence of new nations and political changes in the present era. Writing, research and analysis are key components, including a research essay based on a theme addressed in the course. Strong emphasis is placed on the evaluation, interpretation and use of historical evidence through documents and primary sources, as well as analytical writing incorporating that evidence.

## **UNITED STATES HISTORY \***

**Prerequisite:** None  
**Grade 11**                **1 Year**

Students in United States History analyze the identity, diversity and culture of the American experience, linking America's past to the present. Exploring the democracy and free enterprise of the United States, students critically view the character of America and Americans. Major topics include: the national embodiment of life, liberty and pursuit of happiness; tensions between the individual and the state; extension of equal rights; expansion of the American way of life; surviving and thriving in a global economy; and the United States' role in the world. Assessment of historical materials -- including persuasive writing and at least one research paper -- underscores fundamental elements of the course: the ability to weigh evidence, interpret logically and argue persuasively. Coursework strives to motivate students to be active and responsible citizens, voters, taxpayers -- stewards of the American experience.

## **ADVANCED PLACEMENT UNITED STATES HISTORY \***

**Prerequisite:** "B" or better in Honors World History and Honors British Literature, or "A" in World History and British Literature; plus departmental approval.  
**Students will be required to complete a significant summer assignment assessed immediately at the beginning of the school year.**

**Grade 11**                **1 Year**

Advanced Placement United States History provides an intellectual journey through America's past, examining pathways to the present. Students analyze the history and development of the nation, paying particular attention to the American experience in terms of democracy and free enterprise. AP U.S. History students explore America's identity, diversity and culture while balancing factual knowledge with critical analysis. Equivalent to a college introductory course, AP U.S. History requires rigorous effort. Assessment of historical materials--including self-guided research--underscores fundamental elements of the course: the ability to weigh evidence, interpret logically and argue persuasively. Coursework stresses persuasive essay writing and prepares students to take the AP U.S. History examination offered by the College Board. Passing grades on the exam afford students college credit, the amount of credit varying with each university. All students enrolled in AP U.S. History are required to take the AP U.S. History examination.

## **ECONOMICS \***

**Prerequisite:** None  
**Grade 12**                **1 Semester**

This course is an introduction to fundamental economic concepts, such as scarcity and choice and supply and demand. Students will compare and contrast economic systems throughout the industrialized and developing world, explore the functions of money, causes and consequences of financial crises, the workings of financial markets, and business cycles, paying particular attention to recent economic events.

## **AMERICAN GOVERNMENT \***

**Prerequisite:** None  
**Grade 12**                    **1 Semester**

Students will explore the structure and workings of American Government, exploring the key features of democracy in the United States that set it apart from other nations and government systems. Students will compare the government as designed by the Founding Fathers and expressed through the original Constitution with the functions of different institutions in the United States today, such as financing campaigns, interest groups, and elections. Students will also analyze the relationship between the federal government and state governments and among the different branches of federal government. Finally, students will consider the changing demographics of the electorate and its effect on public policy in the 21<sup>st</sup> century.

## **ADVANCED PLACEMENT AMERICAN GOVERNMENT/ECONOMICS \***

**Prerequisite:** “B” or better in Advanced Placement United States History or “A” in U.S. History and departmental approval. Because of curriculum time restraints, students in this class will be asked to complete a summer assignment including reading and written work, due at the beginning of the school year.  
**Grade 12**                    **1 Semester**

This course will critically explore the structure and function of the United States government: political beliefs and behaviors, federalism, the Constitution and founding principles of government, political parties, interest groups, elections, the media, the three branches of government, civil right and civil liberties, and the public policy process. All students enrolled in the course are required to take the Advanced Placement American Government examination.

## **PSYCHOLOGY\***

**Prerequisite:** None  
**Grade 11, 12**                    **1 Semester**

This course is designed as an introduction to psychology, its themes, definitions, leading figures, and theories. Among the topics studied are human development from infancy to adulthood, learning and thinking processes, and human behavior. This course will cover the topic of social as well as personal growth and development.

## **SOCIOLOGY \***

**Prerequisite:** None  
**Grade 11, 12**                    **1 Semester**

This is a course in the sociological field of the social sciences that provides students with an opportunity to study the development, structure, and function of human collective behavior. The course will cover society and culture, social organization and structure, social institutions, social change, collective behavior, and social problems. Emphasis will be placed on the application of sociological concepts to current problems in our modern world.

## **ACADEMIC DECATHLON**

**Prerequisite:** Willingness to do significant individual preparation.  
**Grade 9-12** First semester (zero period)

Academic Decathlon is a 10-event competition held in January/February each year. Students compete, both individually and as a team, against students from other schools who have similar grade point averages. The school team has nine members: three at 3.75-4.0, three at 3.0-3.74 and three at 0.0-2.99. Students with any GPA are eligible. Themes and readings are announced in the spring of the year preceding the following year's competition. Students are expected to do significant individual preparation over the summer months. Freshmen and new students to Mary Star are encouraged to enroll, even though preliminary preparation is incomplete. The Academic Decathlon's 10 events are: Essay, Speech, Interview, Music, Art, Language and Literature, Science, Math, Social Science, and Economics. There will be a materials fee of approximately \$300 that needs to be paid in June in order to purchase the proper number of packets.

## **WORLD LANGUAGES DEPARTMENT**

### **LATIN I \***

**Prerequisite:** None  
**Grade 9** 1 Year

Latin I introduces students to the Latin language. The student will learn to read connected Latin passages with emphasis on comprehension, and vocabulary building. The student will also be provided with an understanding of Roman cultural roots.

### **LATIN II \***

**Prerequisite:** Passing grade in Latin I  
**Grade 10** 1 Year

This course continues and perfects the grammatical and vocabulary skills developed in Latin I. The student will review all Latin I concepts and further develop translation and vocabulary skills.

### **LATIN III \***

**Prerequisite:** "C" or better in Latin II  
**Grade 11, 12** 1 Year

Latin III is designed to help students be more creative with the language and engage literary pieces that assume two years of Latin grammar. All grammar concepts will be reviewed and students will further develop their vocabulary. Students will be introduced to short stories and Livy's history of Rome to improve reading ability and introduce them to classical authors. Cultural topics will be covered through videos and supplementary materials.

**LATIN IV \***

**Prerequisite:** “C” or better in Latin III  
**Grade 12**                   **1 Year**

In Latin IV students will continue working with literary pieces from classical authors. Grammar concepts will be reviewed and vocabulary further developed. Emphasis will be on reading and analyzing a variety of Latin texts.

**SPANISH I \***

**Prerequisite:**           **None**  
**Grade 9**                   **1 Year**

Spanish I introduces students to the fundamentals of Spanish grammar, culture, and conversation. Emphasis is placed on the four skills of listening, speaking, reading, and writing. Students will acquire the skills necessary to continue their Spanish studies with Spanish II.

**SPANISH II \***

**Prerequisite:**           **Passing grade in Spanish I**  
**Grade 10**                   **1 Year**

Spanish II is a continuation of Spanish I and is designed to help each student attain proficiency in the four skills of listening, speaking, reading, and writing. The history and the cultures of the Spanish-speaking world will also be presented throughout the course. Students will review the major concepts covered in Spanish I, be introduced to several new verb tenses, and acquire new vocabulary. Cultural aspects will be presented with the use of videos and supplemental readings.

**SPANISH III \***

**Prerequisite:**           **“C” or better in Spanish II**  
**Grade 11, 12**               **1 Year**

Spanish III is designed to help students become more creative with the language, participate in more challenging conversations and communicate successfully in basic everyday situations. All grammar concepts will be reviewed and students will further develop their vocabulary. Students will be introduced to short stories and other literary pieces to help strengthen students’ reading ability and introduce them to Spanish authors. Cultural aspects will also be covered with the use of videos and other reading materials. Several written and oral projects will also be assigned.

**SPANISH IV \***

**Prerequisite:**           **“C” or better in Spanish III**  
**Grade 11, 12**               **1 Year**

In Spanish IV, students will participate in interactive communication activities. Through different readings students will be encouraged to express their opinions, interests, ideas and attitudes about the reading and other related topics. Students will also continue to practice and apply their listening, reading, speaking and writing skills while stressing their awareness of the contemporary culture of the Spanish-speaking world. Several written and oral projects will also be assigned.

## **ADVANCED PLACEMENT SPANISH \***

**Prerequisite:** "C" or better in Spanish III or departmental approval  
**Grade 11, 12**                    **1 Year**

Qualified students will undergo a thorough and exacting review of all grammar concepts and vocabulary. Practice Advanced Placement examinations will be taken and reviewed. Emphasis will be on preparation for the AP exam in Spanish Language. All students enrolled in AP Spanish are required to take the AP Spanish Language examination.

# **MATHEMATICS DEPARTMENT**

**A TI-84 graphing calculator is required for all mathematics courses.**

## **INTRODUCTION TO ALGEBRA 1**

**Prerequisite:**                **None**  
**Grade 9**                        **1 Year**

This course is designed to ease the transition from junior high school math to high school algebra. The text utilizes a problem solving approach, offering many examples and real world applications. Topics covered are: integers, variables and expressions, equations and problem solving, number theory, rational numbers and their applications, inequalities, linear equations, and polynomials.

## **ALGEBRA 1 \***

**Prerequisite:**                **HSPT scores**  
**Grade 9, 10**                    **1 Year**

This course is designed to teach students basic algebra skills. Topics of study are: operations and applications of real numbers, equations and problem solving, inequalities, polynomials, factoring, rational expressions, functions, linear equations, probability, quadratic functions and equations, and systems of linear equations.

## **HONORS ALGEBRA 1 \***

**Prerequisite:**                **HSPT and Mary Star's Math Placement Test scores, 8th grade math grades**  
**Grade 9**                        **1 Year**

Algebra I Honors is an accelerated and more intensive study of the topics covered in Algebra I. Additional areas of study include: radicals, an introduction to geometry, and an introduction to trigonometry.

## **GEOMETRY \***

**Prerequisite:**            **Passing grade in Algebra 1**  
**Grade 9, 10, 11**        **1 Year**

This course emphasizes mathematics as a practical, logical, and coherent subject. Students will develop the ability to create formal arguments and provide theorems using a variety of formats including: traditional two-column proofs, using a coordinate system, and connecting algebraic and geometric definitions. Criteria for similarity and congruence, parallel and perpendicular lines, (trigonometric concepts) and the measurement and construction of two-dimensional models are among the concepts mastered. (The use of trigonometric concepts to solve problems provides additional preparation for future math courses.)

## **HONORS GEOMETRY \***

**Prerequisite:**            **HSPT and Mary Star’s Math Placement Test scores, OR “B” or better in Honors Algebra I with departmental approval, OR “A” in Algebra I with departmental approval**  
**Grade 9, 10**            **1 Year**

Students in this honors version of this course will cover geometric concepts at a faster pace and in greater depth than in the regular course. Problems solved will require greater mastery of mathematical vocabulary, greater analysis of what is given and what is asked for in a multi-step problem, and more complex constructions. Students will also master solving the problems in a variety of ways to judge the best approach.

## **INTERMEDIATE ALGEBRA \***

**Prerequisite:**            **Passing grades in Algebra 1 and Geometry**  
**Grade 10, 11, 12**        **1 year**

This course provides a review of Algebra 1 and explores the foundation of Algebra 2. A full range of topics is covered including linear equations and inequalities, polynomials, rules of exponents, factoring, probability and statistics, weighted averages, systems of equations, radical and rational expressions. Emphasis will be placed on physical, numerical, graphical and algebraic representations and real-life applications.

## **ALGEBRA II \***

**Prerequisite:**            **“C” or better in Algebra 1 and Geometry**  
**Grade 10, 11, 12**        **1 Year**

This course is an extension and expansion of Algebra I. Concepts include linear equations, linear inequalities, functions, linear systems, polynomials, higher degree equations and inequalities, rational expressions, radicals and rational exponents, complex numbers, polynomial equations and functions, coordinate geometry, quadratic functions, logarithms, graphing transformations, probability, domain, and range.

### **HONORS ALGEBRA II/TRIGONOMETRY \***

**Prerequisite:** “B” or better in Honors Algebra I and Honors Geometry with departmental approval OR “A” in Algebra I and Geometry with departmental approval

**Grade 10, 11, 12**      **1 Year**

This course serves as a precalculus class. Topics from algebra include logarithms, exponential growth and decay, linear systems, polynomials, quadratic systems, coordinate geometry, radicals, rational expressions, graphing transformations, probability, domain, and range. Trigonometry

topics include the six trigonometric functions and their inverses, graphing, identities, evaluating trigonometric expressions, and solving trigonometric equations. Emphasis is placed on numerical, graphical, algebraic, and verbal expressions of functions.

### **TRIGONOMETRY/PRECALCULUS \***

**Prerequisite:**      **Prerequisite:** “B” or better in Algebra II with departmental approval, OR “C” or better in Honors Algebra II/Trigonometry with departmental approval

**Grade 11, 12**      **1 Year**

This course covers the concepts and skills necessary for success in a college advanced math class. Students study the six trigonometric functions, solve triangles, verify identities, solve trigonometric equations and use polar coordinates. They also study exponents, logarithms, sequences, polynomial equations and functions, conics and matrices.

### **HONORS TRIGONOMETRY/PRECALCULUS \***

**Prerequisite:**      “B” or better in Honors Algebra II / Trigonometry with departmental approval, OR “A” or better in Algebra II and Geometry with departmental approval

**Grade 11, 12**      **1 Year**

Students will understand the following topics graphically, algebraically, and numerically: probability, polynomial equations, logarithms, trigonometric functions, polar coordinates, matrices, sequences and series, and vectors. Students will be able to solve problems with and without technology. Students are challenged to think critically and “outside the box.”

### **ADVANCED PLACEMENT CALCULUS \***

**Prerequisite:**      “B” or better in Honors Algebra II / Trigonometry with departmental approval, OR “B” or better in Honors Precalculus or Trigonometry / Precalculus with departmental approval

**Grade 11, 12**      **1 Year**

Students will understand the following topics graphically, algebraically, numerically, and verbally: limits, derivatives, integrals, maximum/minimum problems, area, volume, and differential equations. Students are challenged to think critically and “outside of the box.” Students are required to take the AP Calculus AB Exam. Students who do not pass the AP Exam may still be able to test out of a partial sequence of calculus in college, depending on the university.

## **CONSUMER MATH**

**Prerequisite:**           **Passing Grade in Algebra 1**  
**Grade 12**               **1 Year**

This class is designed to help students meet the challenges of everyday life. Mathematics is interwoven into almost every aspect of our lives and the ability to solve everyday math problems is considered a basic skill. Among the skills students will learn are those needed to: find the best deal shopping; estimate tips; understand credit cards; figure loans, repayments, and interest; determine the nutritional value of foods; determine the Calories burned in activities; take and use measurements for clothing and recipes; understand tax brackets and fill out a 1040EZ; prepare a budget; interpret pie charts and tables; understand some retirement plan investing; travel in a foreign country; and understand odds/probability in games of chance.

# SCIENCE DEPARTMENT

## PHYSICAL SCIENCE

**Prerequisite:** None  
**Grade 9** 1 Semester

Physical Science is an introductory level science course designed to teach the basic principles of the scientific method using the concepts of the physical sciences. Emphasis is on observation, data recording techniques, analysis, and hypothesis formation. Topics include the physical world; investigation of science problems; motion and energy; forces, work and machines; and properties of matter. The course is lab oriented.

## BIOLOGY \*

**Prerequisite:** Passing grade in Physical Science  
**Grade 9, 10** 1 Year

Biology enables students to develop an understanding of the role of science in society, and the world, by mastering the scientific method of inquiry, while investigating living systems. It is designed to present the student with the fundamental concepts of biology. Topics include, but are not limited to, the scientific method, cell theory, basic biochemistry, genetics and heredity, evolutionary theory, and a survey of representative living systems. This course also involves extensive hands-on laboratory activities. Emphasis will be on allowing students to gain preparation for further study of the sciences. Requirements include a complete dissection of a crayfish and frog.

## HONORS BIOLOGY \*

**Prerequisite:** “A” in Physical Science, “A” in Algebra 1 or “B” or better in Honors Algebra 1 and departmental approval.  
**Grade 9, 10** 1 Year

Honors Biology enables students to develop an understanding of the role of science in society, and the world, by mastering the scientific method of inquiry, while investigating living systems. It is designed to present the student with the fundamental concepts of biology in greater depth than academic Biology. Topics include, but are not limited to, cell theory, basic biochemistry, genetics and heredity, evolutionary theory, and a survey of representative living systems. This course also involves extensive hands-on laboratory activities. Emphasis will be on allowing students to gain preparation for further study of the sciences. Requirements include a complete dissection of a crayfish and frog.

## **CHEMISTRY \***

**Prerequisite:** **Biology or Honors Biology, concurrent enrollment in Algebra 2 or higher, and department approval**

**Grade 10, 11, 12      1 Year**

Chemistry introduces the student to the principles of chemistry. Emphasis is on scientific practices and problem-solving skills. Topics covered include, but are not limited to, the nature of matter, atomic theory, periodic properties, chemical bonding, reactions and equations, molar relationships, stoichiometry, acids and bases, rates, equilibria, and thermochemistry. The course involves hands-on laboratory activities and addresses the nature of scientific inquiry.

## **HONORS CHEMISTRY \***

**Prerequisite:** **Honors Biology, concurrent enrollment in Honors Algebra 2 or higher, and departmental approval**

**Grade 10, 11      1 Year**

Honors Chemistry is designed to present the student with the principles of chemistry in greater depth and detail than in the regular chemistry course. Emphasis is on scientific practices, quantitative relationships, and problem-solving skills. Topics include, but are not limited to, the nature of matter, atomic theory, periodic properties, chemical bonding, chemical reactions and equations, molar relationships, stoichiometry, gases, thermodynamics, acids and bases, rates, and equilibria. The course involves hands-on laboratory activities and addresses the nature of scientific inquiry.

## **ANATOMY/PHYSIOLOGY \***

**Prerequisite:** **“C” or better in Biology and/or Chemistry**

**Grade 10, 11, 12      1 year**

Anatomy is a laboratory course designed to acquaint the student with the terminology used to describe the human body and the fundamental concepts of human anatomy and physiology. It will focus on the basic organization of the human body, cellular and tissue structure and function, development, and major body systems in health and disease. The course is primarily a laboratory course and involves microscope work and a complete dissection of a fetal pig and sheep heart. Students who are ethically opposed to dissection or who are squeamish about dissection should not enroll in the course.

## **MARINE SCIENCE \***

**Prerequisite:** **Passing grade or better in Biology and Algebra 1**

**Grade 10, 11, 12      1 Year**

Marine Science is a yearlong course that will build upon the students understanding of biological concepts previously learned. Emphasis will be made on using investigative techniques to explore the chemical, physical, geological, and biological aspects of the marine environment. Students will not only have an understanding of the world's ocean, its organisms' behaviors and adaptations, and structures and functions that exist throughout all of the marine environment, but they will also take a close look at how humans have affected and changed the marine environment over time. Students learn how energy flows and cycles throughout the Earth and

analyze the interrelationships of the various organisms involved. The hands-on laboratory activities include, but are not limited to, demonstrations of geological concepts, examination of physical characteristics - such as waves - in the ocean, and examination of anatomical structures and its relation to the physiological adaptations of an organism. Students are required to participate in a variety of dissections representative of marine invertebrates and vertebrates. Students who are ethically opposed to dissection or who are squeamish about dissection should not enroll in the course.

### **ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE \***

**Prerequisites:** “C” in Biology/Honors Biology and Chemistry/Honors Chemistry,  
and departmental Approval

**Grades 11, 12**           **1 Year**

AP Environmental Science is a year-long college-level course designed to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. Students are required to take the AP Environmental Science examination in May.

### **PHYSICS \***

**Prerequisite:** “B” or better in Chemistry and Algebra 2, and departmental  
approval

**Grade 11, 12**           **1 Year**

Physics is designed to familiarize the student with basic principles of the science of matter and energy and their interactions. The class will focus on quantitative relationships and examine how these laws govern the physical world. Students will conduct extensive hands-on laboratory activities that allow them to experience the concepts discussed in the class for themselves. Topics covered include Mechanics, Properties of Matter, Heat, Sound and Light, and Electricity and Magnetism.

### **ADVANCED PLACEMENT PHYSICS 1 \***

**Prerequisite:** “B” or better in Chemistry and Trigonometry/PreCalculus or Honors  
Trigonometry/PreCalculus, and departmental approval. Suggested  
concurrent enrollment in Calculus

**Grade 11, 12**           **1 Year**

This course is designed to give students an in-depth study of Newtonian Mechanics, Electricity and Magnetism. Students will use mathematical reasoning — arithmetic, algebraic, geometric, trigonometric or calculus, where appropriate — to the study of the physical world and its governing laws. All students enrolled in the course are required to take the AP Physics 1 examination.

# VISUAL AND PERFORMING ARTS DEPARTMENT

## **ART I/ART II \***

**Prerequisite:** None  
**Grade 11, 12** 1 Year

The Fine Arts Department stresses the theme “Art is communication.” The teacher emphasizes perception and expression of the student’s personal and communal world. The students explore various media while learning fundamental techniques of design, composition, form, and color. The students are introduced to drawing with an emphasis on various styles. The student will also be introduced to the basic fundamentals of portraiture, landscape, and still life. The media to be used are pencil, charcoal, pen, ink, watercolor, pastels, and collage. Art II explores advanced techniques in artistic media. The student builds on techniques already developed and experiments with additional mediums such as: painting, printmaking, fabric design, graphic art, and stencil making. This course fulfills the Visual and Performing Arts requirement for graduation.

## **ADVANCED ART/PORTFOLIO DEVELOPMENT**

**Corequisite:** Art I and II, Art and Music History, or Dance  
**Grade 11, 12** 1 Year

A year-long course intended to assist students in preparing portfolios for various art colleges and art programs in the following areas: Fine Arts (Drawing and Painting), Photography, Graphic Arts. As a project-based course, students design and complete work based on personal interests and/or portfolio requirements for programs to which the students are applying.

## **ART AND MUSIC HISTORY \***

**Prerequisite:** None  
**Grade 11, 12** 1 Year

Art and Music History is equivalent to a two-semester introductory college course that explores the nature of art, art making, and responses to art. Students will trace the history and development of visual and performing arts from its prehistoric roots to the present time. They will learn to understand the musical and artistic manifestations of cultural and societal values throughout history, and will be introduced to a variety of visual arts techniques in media and text, online websites, and by visits to galleries, museums, and/or public art spaces. Students will be introduced to formal aesthetic criteria that will enable them to analyze the relationship of form to content in various artworks as well as discuss their subjective responses to visual art. Extensive in-class viewing and listening will enable them to recognize different musical and artistic styles and trends. This course fulfills the art requirement for graduation.

**DANCE\***

**Prerequisite:**           **None**  
**Grade 9**                   **1 Year**

This course is designed for the student who has no previous understanding of dance. It will give the student a basic introduction to dance history, dance skills, costume design, and performance production. The student will be able to appreciate various styles of dance from ballet to hip hop along with an emphasis on fitness and exercise. A quarter of this class will also be dedicated to a health component. Through their study, students will see the benefits of taking care of oneself, making healthy choices and understanding that taking care of one's health is a lifelong discipline. This course fulfills the MSHS P.E. requirement.

**YEARBOOK**

**Prerequisite:**           **Department approval**  
**Grade 9-12**             **1 Year (zero period)**

The yearbook class has as its main function the production of the Mary Star of the Sea Yearbook (Stella Maris). The staff is introduced to the principles of photojournalism, copy writing, editing, layout design, advertising, and other business techniques. In order to meet deadlines, staff members use the principles learned and work together to establish the yearbook's budget, content, organization and design. Class size limited to 20 students. Students are required to interview for this class.

# PHYSICAL EDUCATION DEPARTMENT

## PHYSICAL EDUCATION

**Prerequisite:** None  
**Grade 9** 1 Year

This course is designed for students of all skill levels and athletic ability. It will give the student a basic introduction to fitness, exercise and sport. The student will be able to appreciate a wide variety of athletic activities and understand the importance of teamwork and responsibility.

## HEALTH

**Prerequisite:** None  
**Grade 9** 1 Semester

An On-line Health course will provide students information to understand the importance of health and wellness for all individuals and their communities. All students will learn about the mental, physical, and social aspects of health. Topics will include nutrition, exercise, disease, building relationships, weight management, stress, and alcohol/tobacco.

## DANCE\*

**Prerequisite:** None  
**Grade 9** 1 Year

This course is designed for the student who has no previous understanding of dance. It will give the student a basic introduction to dance history, dance skills, costume design, and performance production. The student will be able to appreciate various styles of dance from ballet to hip hop along with an emphasis on fitness and exercise. Students will also be introduced to the basic skills of creating Fashion Design. The student will be able to sketch a body form based off the 9-Head fashion model. Fundamental skills of shading, shadowing, sketching and will be emphasized in this course. This course fulfills the MSHS P.E. and Visual and Performing Arts requirement.

## ADVANCED PHYSICAL EDUCATION

**Prerequisite:** None  
**Grade 11, 12** 1 Semester

This course is designed to increase the athletic skill level of students. It will teach the value of physical exercise, recreational activities, and a commitment to lifelong fitness. The activities included in this course, but not limited to, are volleyball, basketball, golf, soccer, baseball/softball, hockey, weight training and physical fitness.