



**THE MISSISSIPPI  
SCHOOL FOR  
MATHEMATICS & SCIENCE**

**2010-2011**

**COURSE CATALOG**

*An Opportunity for Excellence*

**The  
Mississippi  
School for  
Mathematics and Science**

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# THE MISSISSIPPI SCHOOL FOR MATHEMATICS & SCIENCE

## Course Catalog 2010-2011

### Introduction

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The Mississippi School for Mathematics and Science graduation requirements are designed to give each student a well-balanced program with a broad range of electives and advanced study options. Electives, if wisely selected, will help the student explore and develop his/her own interests and abilities. We hope that this guide will help the student and his/her parents plan an exceptional program of study while at MSMS. At the critical decision points in the final two years of high school, the student should periodically review his/her educational goals and thoughtfully develop a program of studies that will help to achieve these goals.

A few guidelines to be followed are:

- Keep minimum and maximum course loads in mind.
- Know MSMS graduation requirements.
- Consider expectations and admissions criteria of prospective universities.
- Before selecting a course, check the description to be sure it fits your needs, interests, and abilities -- and that you have completed the prerequisite course work necessary for enrollment.
- Plan ahead -- develop a two-year plan of study

The course offerings described in the MSMS Course Catalog have been developed for the 2010-2011 school year. They have been designed to provide both depth and breadth in the instructional program. An effort is made to accommodate student interest, with final decisions on any year's course offerings based on staff availability and satisfaction of minimum enrollment requirements.

**This course catalog is intended to provide guidance in developing a two-year plan of study and course selection. Policies specific to academic and residential life will be printed in the 2010-2011 MSMS Student Handbook.**

## SPECIAL ACADEMIC PROGRAMS

### Correspondence Courses/Virtual Courses

*Mississippi Accountability Standards* and MSMS allow no more than one (1) Carnegie unit to be earned through completion of an approved correspondence course(s). It is recommended that students complete correspondence courses prior to attending MSMS. However, students who have approval to be enrolled in a ½ credit correspondence course while at MSMS must complete the course in one semester. It is recommended that 1 credit courses be completed in one semester but with approval students in 1 credit courses may have an extended time period, not to exceed two semesters. **Neither correspondence credit nor virtual school credit will apply to the 13 Carnegie units required to be earned at MSMS.**

### Dual Credit

MSMS currently offers specific courses in English, mathematics, and physics on our campus which MUW accepts for dual credit. Dual credit agreements may be developed or revised following publication of this course catalog; students and their parents will be notified of revised dual credit agreements via an addendum to this catalog. MSMS students who are enrolled in approved dual credit courses must (1) meet the early admission standards specified in the dual credit agreement, (2) meet all course prerequisites as specified, and (3) complete the appropriate college admissions paperwork. Students taking dual credit courses will receive a grade on both the MSMS high school transcript and the transcript of the college or university awarding credit. A student who successfully completes a dual credit course will earn both high school and college credit. If a student leaves MSMS, or for any reason drops a Dual Credit class, it is the responsibility of the student to drop the class from the University affiliate. Failure to do so could result in an "F" on the University transcript.

**Note:** A year long dual credit course that represents two courses at the university level, will receive the MSMS mid-year grade as the final grade for the first semester university course and the MSMS final year grade will be the final grade for the second semester university course.

### Dual Enrollment

With the approval of the Director of Academic Affairs, students who meet early admission standards at MUW and complete the appropriate admission paperwork are eligible to take classes at MUW for college credit. Juniors are allowed to be dual enrolled at MUW in the spring semester. A student who successfully completes a dual enrollment course will earn college credit only.

**IMPORTANT NOTE regarding dual credit and dual enrollment:** By enrolling in more than 29 college credit hours, a student may be considered a sophomore at some universities, thus impacting eligibility for freshman scholarships (See your Academic Counselor for more information.) Dual Credit and Dual Enrollment course grades are included in respective colleges GPA and will affect scholarship eligibility.

### Special Topics

Special Topics are offered on a limited basis to students who have a strong academic background and an interest in intensive supervised study beyond scheduled course offerings. Any course that is available in the Master Schedule of classes **cannot** be taken as an independent study at MSMS. **Special Topics are taken for credit over and beyond MSMS graduation requirements.** Other options will be considered only in special circumstances. A student interested in independent studies must initiate a *Request for Special Topics* available from his/her counselor. A study plan, agreed upon by teacher, student, counselor, and approved by the Director of Academic Affairs, must be in place prior to the start of the study.

### Independent Study

A course or courses listed in the course catalog that cannot be scheduled by a student. Students interested in an independent study must have the approval of the instructor and Director for Academic Affairs, **Any course that can be scheduled cannot be taken as an independent study at MSMS.**

### Interventions

The academic progress of all MSMS students is reviewed every 4½ weeks by the Director for Academic Affairs with input from counselors, staff, and faculty. Students will be placed on academic probation and/or an Academic Intervention Plan will be devised and implemented as needed to meet individual student needs. The purpose of the review will be to determine which students are not being successful in their course work and to make recommendations for strategies to assist those students. Upon review of student grades, academic probationary status is assigned if a student:

- 1) has earned two or more failing grades (0-69) during any 9 week grading period.
- 2) has earned a semester grade of NC in one course.

- 3) has earned one final grade of NC.
- 4) has earned three C's.

Students will remain on academic probation for 4 ½ weeks. Students who are not performing up to expectations and/or who are on academic probation will have specific strategies developed to assist in their academic progress which may include:

- 1) assignment to required tutorials.
- 2) assignment to ISP or Required Studies.
- 3) curtailment of social and/or extracurricular activities.

Attending MSMS is considered a special opportunity and privilege and with this opportunity comes responsibilities. Therefore, in keeping with the MSMS philosophy, success is an expected academic outcome for students. Students will not be extended an invitation to return to MSMS and must reenroll at their home school for the remainder of their secondary education if any one of the following applies:

- 1) Any student receiving two NC's (no credit) at the end of the first semester (this includes semester and year-long courses)
- 2) Juniors receiving two NC's at the end of the second semester
- 3) Juniors failing to earn six credits at the end of the junior year
- 4) Students failing Algebra II
- 5) Seniors, at the end of the first semester, who have failed coursework that prohibits their being able to meet MSMS graduation requirements in the remaining semester of their senior year.
- 6) Students demonstrating inappropriate behavior in keeping with the school's academic or behavioral expectations.

During the summer between a student's junior and senior years, an assessment will be made by school officials based on behavioral and academic performance, as well as other factors independently considered, regarding the student's continuation at MSMS.

**PARENTS ARE EXPECTED TO CONTACT TEACHERS AT LEAST FOUR TIMES PER SEMESTER FOR ADDITIONAL PROGRESS REPORT INFORMATION.**

## Summer School

Juniors who fail Foundations (MA 235) during their junior year must take and pass a Pre-Calculus course at a community college or university during the 1<sup>st</sup> summer session following their junior year. The student is also expected to pass the MSMS final examination in the course. All expenses for the college course will be the responsibility of the parents/guardians. **Juniors who fail Foundations in the summer and/or who do not pass the MSMS final examination in the course will not be allowed to return to MSMS their senior year.**

At the discretion of the Director for Academic Affairs, MSMS may accept summer school credit or award placement for certain pre-approved courses taken at a community college or university. CREDIT WILL NOT BE ACCEPTED FROM ANOTHER HIGH SCHOOL. Summer courses taken before official enrollment in the fall at MSMS will become a part of the student's home school transcript.

### **Summer courses for remedial credit:**

- Any student who has failed a course at MSMS must obtain written approval from the Director for Academic Affairs for any plans to make up credit for the failed course by attending summer school at a community college or university. This approval must be received before registering for summer school. The student must provide course descriptions from the catalog of the institution he/she wants to attend and course syllabi. The administration of MSMS, with input from the appropriate department, will make all decisions regarding the specific course(s) and the length of the course(s) (one or two semesters) to be taken for MSMS credit. After completing the course(s) and before fall classes begin at MSMS, the student will also be expected to pass the MSMS final examination in the course(s) for which credit is being sought.
- No permission will be given to receive MSMS credit for a summer course to be used as a substitute for an MSMS course unless the student has attempted the MSMS course and received a failing grade.

### **Summer courses for placement (no credit awarded):**

- Students who have completed the junior year and want to attend summer school in order to meet prerequisite requirements for a more advanced course in the MSMS curriculum will need approval of the counselor, the academic department involved, and the Director for Academic Affairs. This approval should be gained well before leaving the campus at the end of the junior year. The student must provide course descriptions from the catalog of the institution he/she wants to attend and course syllabi. After completing the course and before fall classes begin at MSMS, the student will also be expected to pass the MSMS final examination in the course taken in summer school before that course may serve as a prerequisite for a more advanced MSMS course.

## **GUIDELINES FOR SELECTING COURSES**

### **Registration Process**

The registration process begins with a general meeting during which graduation requirements, course offerings, and the registration process are explained. It ends when students have selected their courses for the next school year and returned their registration form to MSMS.

Students who come from a public or private school or program (correspondence, tutorial, or home study) not accredited regionally or by a state board of education must take placement tests in English, Social Studies, Math and Science.

Juniors having questions are encouraged to call MSMS, seek the counsel of faculty members and counselors of their home schools, and confer with their parents. Seniors are asked to discuss their selections with their individual counselors, MSMS faculty members, and their parents.

### **Subject Area Testing Requirements Mississippi Department of Education**

#### **Class of 2011 and 2012**

Students in the Class of 2011 and the Class of 2012 must pass the subject area tests in Algebra I, U.S. History from 1877, English II, and Biology I as a requirement for graduation.

State Board Policy 3800 [[http://www.mde.k12.ms.us/SBE\\_policy\\_manual/3800.htm](http://www.mde.k12.ms.us/SBE_policy_manual/3800.htm)] outlines the graduation requirements for the Mississippi Subject Area Tests for the following circumstances: when a student has already earned a Carnegie Unit in a course prior to implementation of the new graduation policy, when a student enters a Mississippi public school from another state, private school, or home school, and retesting procedures for when a student fails to pass a required Subject Area Test.

## Selecting Courses

The following recommendations are based on prior experience in working with MSMS students. We ask that the student follow these guidelines, although we do realize that each student is an individual with particular abilities and needs. Please use the WATS line (1-800-400-4656) to contact an academic counselor if questions arise.

- Read thoroughly the course descriptions in the Course Catalog, paying particular attention to the necessary prerequisites and amount of credit for each course.
- Read carefully MSMS graduation requirements.
- Schedule required courses first then elective courses, thinking in terms of a two-year plan. It is important that a student consider his/her background, interests, college and career goals, and aptitude.
- The results of placement tests, along with various recommendations, will be sent to the student as soon as possible to facilitate course selection.
- **The student should not enroll in any course for which he/she has already received credit.**
- **Students who have not taken health prior to attending MSMS must complete the course by the end of their junior year.** Health will not count toward the 13 credits required at MSMS.
- Students will be required to enroll in a sufficient number of required and elective courses so that the total number of credits earned at MSMS is at least 13. Only one credit in the Arts may apply toward the 13 MSMS credits required for graduation. No correspondence course or virtual school credits may be used to meet the requirement of 13 MSMS credits.

## MSMS GRADUATION REQUIREMENTS CLASSES OF 2011 & 2012

At least 13 credits (Carnegie units) must be earned while enrolled at MSMS. The following **7.5 credits must be earned at MSMS.**

**English** – Each student is required to earn **two credits** by successfully completing approved English classes each year. Each student must be enrolled in a required English course every semester.

**Mathematics** – Each student is required to earn **two credits** in mathematics, to include either 1/2 credit in Calculus or 1/2 credit in Statistics.

**Science** – Each student is required to take and earn one credit in biology, one credit in chemistry, **and** one credit in physics (½ credit must be a mechanics course with the other ½ credit being a waves, electricity & magnetism course) for a total of **three credits**.

**Swing Credit** (Mathematics/Science Elective) – In addition to the above Mathematics and Science requirements, each student is required to take and earn an additional ½ **credit** of either mathematics or science coursework.

**Social Studies** – Specific requirements depend on what the student has previously completed.

**Foreign Language** – Specific requirements depend on what the student has previously completed.

**Health** -- Students who have not taken health prior to attending MSMS must complete the course by the end of their junior year.

**All students must have earned credit in Algebra I and Unified Geometry before entering MSMS.** It is strongly recommended that Algebra II be completed also. In the event that a student has completed Algebra I and Algebra II, but does not have a credit for Unified Geometry, the student may be granted provisional admission and must complete a Geometry course either by correspondence, virtual school or summer school offerings. **This credit must be earned before the beginning of the junior year at MSMS.** A course in Unified Geometry will not be taught at MSMS.

The following courses are required for MSMS graduation, but credit may be earned prior to grade 11. Students meeting any of these requirements before enrolling at MSMS will complete elective courses to earn the required total of 13 credits at MSMS.

### MSMS Graduation Requirements

CURRICULUM AREA	CARNEGIE UNITS	REQUIRED COURSES
ENGLISH	4	Courses must require substantial communication skills and may not be compensatory in nature.
MATHEMATICS	4.5	Algebra I (1 credit) Algebra II (1 credit) Unified Geometry (1 credit) Trigonometry (1/2 credit) Foundations of Higher Math or its equivalent (1/2 credit) Either Calculus or Statistics (1/2 credit)
SCIENCE	4	Biology I (1 credit) MSMS Biology (1 credit) MSMS Chemistry (1 credit) MSMS Physics (1 credit)
SOCIAL STUDIES	4	U.S. History (1.0 credit) U.S. Government (1/2 credit) Mississippi Studies (1/2 credit)* World History (1.0 credit) Economics (1/2 credit) Geography (1/2 credit)
BUSINESS & TECHNOLOGY	1	Computer Applications (1/2 credit) and Keyboarding (1/2 credit) <i>or</i> Computer Discovery in the 8 <sup>th</sup> grade (1 credit)**
HEALTH	1/2	Comprehensive Health or Family and Individual Health
PHYSICAL EDUCATION	½	Class of 2012****
THE ARTS	1	Examples: Band, Choral Music, Drama, Drawing, Painting, Sculpture***
FOREIGN LANGUAGE	2	Two units of the same foreign language recommended
SWING CREDIT	½	Either an MSMS mathematics or science course
OTHER ELECTIVES	2.5	Your Choice
TOTAL UNITS REQUIRED	24	

\* Credit earned for State/Local Government in any other state by an out-of-state student who enters after the sophomore year can stand in lieu of MS Studies. If the student took a State/Local Government course in a grade level that did not award Carnegie unit credit, then any other 1/2 unit social studies course may be accepted.

\*\* Evidence of proficiency in Keyboarding & Computer Apps is accepted in lieu of the required courses if the student earns one unit in an approved Business and Technology course

\*\*\* only one credit in the Arts may be applied toward the 13 required MSMS credits

\*\*\*\*Students who have received credit in interscholastic athletic activities, band, and ROTC before entering MSMS have fulfilled the physical education requirement.

### Recommended Course Load

#### Juniors

**Entering juniors are encouraged to limit their academic credits to 7 ½.** The minimum requirement is 7 academic credits for the year. Exceptions to this are assessed on an individual basis and the decision to allow extra courses rests with the Director for Academic Affairs. Students are expected to have no fewer than six academic courses each semester. **Sometimes students mistakenly have registered for seven courses instead of seven credits.**

When second semester begins, the student will be given an opportunity to add additional one-semester courses, contingent upon his/her first semester grades, available seats, and approval of the Director for Academic Affairs. Due to increased time demands, it is recommended that students limit the number of advanced courses taken each year.

#### Seniors

A minimum of 6 academic credits is required for the senior year. Seniors are advised to consider graduation requirements and their performance as juniors in deciding on the number of courses to select. Pursuit of courses that enhance preparation for a college/university major is suggested.

**Students are advised to think in terms of planning a two-year curriculum at MSMS.**

#### Definitions:

**Credit:** Carnegie Unit

**Course:** Class

**Pre-requisite:** A course that must have been taken with credit earned prior to another course.

**Co-requisite:** A course that must be taken in the same semester or must have been taken prior to another course.

## Schedule Changes

Students will have until May 15, 2010 to submit a written request for a change in course selections for the next school year. After May 15, 2010 schedules will be completed and changes will not be made until students arrive in August. Written requests for changes in course selection may either be delivered by hand or mailed to:

MSMS Office of Academic Affairs  
1100 College Street MUW-1627  
Columbus, MS 39701

**Conflicts with the master schedule or an insufficient number of students requesting to take a course may result in one or more alternate course selections appearing on a student's schedule. Students will be notified of conflicts that require selection of additional course offerings. Many MSMS courses are offered as a single section; a conflict matrix is used in placing those sections in the master schedule to meet the requests of the largest number of students. Students who request several of these single section courses should anticipate that one or more may be unavailable due to scheduling conflicts.**

**Students sign up for courses primarily based on freedom of choice. The school hires teachers, plans facilities, and develops the master schedule around these choices.** Therefore, schedule changes will not be considered to enable students to choose teachers or specific periods. All schedule changes are made through the Academic Counselors in the Counseling Center. **Students must follow their schedule until notified in writing of the change.**

## Adding and Dropping Courses

### Adding a Course

On a space-available basis, students wishing to add courses to their schedules have one week from the first day of class at the beginning of each semester to do so.

### Dropping a Course

**With approval of the Director for Academic Affairs, students will be allowed to drop courses from their schedules during the first four weeks of each semester if they are experiencing academic difficulty or at the recommendation of the course instructor or counselor.**

Because year-long courses are taught in 2 semesters and students are evaluated at the end of both semesters, failure to pass either the fall or spring semester will be recorded as "NC" on the student's grade report. A "NC" may affect the student's privilege to return to MSMS and/or to graduate. Students deemed unable or unwilling to accept the commitment necessary to be successful in this special learning environment will be returned to their home school provided that applicable due process protections are afforded the student.

Students are not allowed to drop courses that result in a class load of less than 6 courses (A minimum of thirteen (13) credits must be earned while enrolled at MSMS). **Seniors are advised that dropping a course may impact scholarship status – check with your college/university for more detail.**

## **COURSE OFFERINGS**

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### **COURSES**

This catalog lists all of those courses that the school is prepared to offer. Since the total enrollment of MSMS is relatively small, it may not be possible or desirable to offer all courses every year. **A sufficient number of students must request a course for the course to be offered.**

### **COMPUTER SCIENCE**

#### **Introduction**

The purpose of the Computer Science department is to provide interested MSMS students with the opportunity to explore, understand, and manipulate computers and related technologies.

Because computer use is integrated into most levels of the MSMS curriculum Computer Science courses are not required for graduation beyond those required by the state of Mississippi. All Computer Science courses are considered elective credit and no Computer Science course can be used as a Math/Science swing credit.

#### **Guidelines for Required Computer Science Courses**

Several courses are available to those who are interested and/or need additional credit to meet the state requirements for graduation.

#### **Objectives**

Within the study of Computer Science, students will be equipped:

- 1) To understand the computer as an information, communication, and computational device;
- 2) To recognize and comprehend modern programming languages; and
- 3) To use sound design principles to encourage effective communications over electronic media.

### **CS 701 - Desktop Publishing**

Desktop Publishing offers the student the opportunity to use basic computing skills in the production of attractive documents such as a flyer, letterhead, business card, report cover, and newsletter. Graphic design and page layout techniques are emphasized. Students will produce attractive documents that communicate effectively and use proper desktop publishing strategies.

Prerequisite: None  
Credit: ½  
Length: 1 semester

### **CS 703 – Introduction to Programming**

Description: This course provides an introduction to problem solving and computer programming using object-oriented techniques. Both theoretical and practical aspects of programming and problem solving will be explored. A must for anyone interested in pursuing a career in Engineering, Mathematics, or Sciences.

Prerequisites: Algebra II  
Credit: ½  
Length: 1 semester

### **CS 704 – Intermediate Programming**

Description: This course explores object-oriented problem solving, design, and programming. It also provides an introduction common ways of representing data in memory and the amount of time and space each representation uses. Concepts such as error handling and data verification will also be explored.

Prerequisites: Intro to Programming or consent of instructor  
Credit: ½  
Length: 1 semester

### **CS 716 – Introduction to Robotics**

Description: This course involves the introduction of the study of Robotics. A history of robotics will be presented from Hero to the ASIMO and beyond.

Cultural representations and expectations of robots and robotics will be discussed as well. Hands-on labs involving Lego Mindstorm NXT robotics kits will be used to explore the art and science of robotics.

Prerequisites: None  
Credit: ½  
Length: 1 semester

### **CS 714 – Site Design: Research and Practicum**

This class introduces students to tips, tools, and techniques for designing web sites from the ground up. Topics include site hierarchy, font and color decisions, MacroMedia Dreamweaver, and Flash. Students will apply this knowledge to design and implement a web site on a research topic of their choice.

Prerequisites: None  
Credit: ½  
Length: 1 semester

### **CS 715 – Web Services**

Students design, implement, and manage components of the MSMS Web Site.

Prerequisite: Consent of Instructor  
Credit: ½ or 1  
Length: 1 semester or 1 year

### **CS 720 – Computer Problems/Special Topics**

Computer problems/special topics is an individualized advanced class where students will have the flexibility of choosing their projects or topics of interest. The projects could involve any aspect of modern computing.

Prerequisite: Consent of instructor and Director for Academic Affairs  
Credit: ½ or 1 (elective credit beyond the required 13.0)  
Length: 1 semester or 1 year

# ENGLISH

## Introduction

The purpose of the English program at the Mississippi School for Mathematics and Science is to provide students with opportunities for acquiring skills and knowledge to prepare them for successful performance in college English and to enter the college English curriculum at the highest possible level. Upon successful completion of the program, students should have the ability to comprehend, generate, and communicate ideas.

## Guidelines for Required English Courses

MSMS requires that English be taken **each semester**. Journalism, Yearbook, Debate, Southern Writers, and Creative Writing are offered to all students but may **NOT** be used to meet graduation requirements in English. **Juniors are required to enroll in either EN 100 (University English I) or EN 101 (Honors English). Seniors are required to enroll in one of the following full year courses: EN 200 (University English II) or EN214 (British Literature) or EN 216 (World Literature).**

## Objectives

Specifically, the objectives of the program are to equip students:

- 1) To comprehend, interpret, evaluate, and use what they read;
- 2) To write well-organized, effective papers;
- 3) To listen effectively and discuss ideas intelligently;
- 4) To appreciate the breadth and depth of their literary heritage;
- 5) To discover how their literary heritage enhances imagination and ethical understanding;
- 6) To recognize how their literary heritage relates to the customs, ideas, and values of today's life and culture; and
- 7) To utilize technology as they integrate reading, writing, speaking, listening, and viewing in English studies.

Seniors are required to take a full year approved 200-level course. (Journalism, Yearbook, Debate, Southern Writers, Special Topics, and Creative Writing courses **do not** count toward the English requirement.) Juniors also have the option of taking any of the 100-level courses as electives. Seniors may take any of the 100- or 200-level courses as electives (with the exception of EN 200 and 214). **Registration for courses as electives will depend upon the space necessary to accommodate all students who need courses to meet the English requirement for graduation.**

## EN 100 – University English I (College Credit)

Students who take University English I must have a composite score of 25 on the ACT. This course is offered for dual-credit. By an articulation agreement with the Mississippi University for Women, students who successfully complete the class will satisfy the requirement for junior English at MSMS and receive six semester hours of college credit: three hours for EN 101 (English Composition) and three hours for EN 204 (Survey of American Literature II). The course is a survey of American literature from the colonial period to the present. It also has a writing component that includes narrative, descriptive, expository, and critical essays, and a research paper.

Prerequisite:	Junior standing, admission to MUW, and a composite Act score of 25
Credit:	1
Length:	1 year

**Note:** A year long dual credit course that represents two courses at the university level, will receive the MSMS mid-year grade as the final grade for the first semester university course and the MSMS final year grade will be the final grade for the second semester university course.

## EN 101 – Honors English

This course is a survey of American literature from the colonial period to the present. The emphasis is on major writers and their relations to main currents of American thought. Students will complete outside readings, respond to the literature through critical essays and a research paper, and participate in class discussions.

Prerequisite: none  
Credit: 1  
Length: 1 year

### EN 125 – African-American Writers

This course is a study of the development of African-American writers and their times. Successful students will complete outside readings, will respond to the literature through critical essays and timed examinations, and will participate in class. Offered during the spring semester.

Prerequisite: none  
Credit: ½ (elective)  
Length: 1 semester

### EN 130 – Shakespeare I: The Romantic Comedies and Histories

This course is an introduction to the works of William Shakespeare and will concentrate on early plays. Students will read approximately a dozen plays, including The Comedy of Errors, Richard III, and the Henry plays.

Prerequisite: none  
Credit: ½ (elective)  
Length: 1 semester

### EN 132 – Shakespeare II: The Tragedies and Late Romances

The course will focus on the later plays of Shakespeare. Students will read ten to twelve plays, including Othello, King Lear, Anthony and Cleopatra, and The Tempest.

Prerequisite: none  
Credit: ½ (elective)  
Length: 1 semester

### EN 134 – Classical Literature I: Epic Poetry

The focus of this course is on the great epic poems of the Greeks and Romans. Students will read The Iliad, The Odyssey, and The Aeneid. This literature provides students with an excellent background for more modern European and American works.

Prerequisite: none  
Credit: ½ (elective)  
Length: 1 semester

### EN 135 – Classical Literature II: Drama and Philosophy

Students will study the works of the great Greek playwrights: Aeschylus, Sophocles, Euripides, and Aristophanes. Students will also read selections from Greek and Roman philosophers, including Plato, Aristotle, Seneca, and Epictetus.

Prerequisite: none  
Credit: ½ (elective)  
Length: 1 semester

### EN 150 – Yearbook I

This course is for those students interested in journalism, photography, and art who are willing to take on the task of creating a yearbook for the school. Techniques of article writing, page layout, page design, artwork, photographic composition, and computer publishing will be taught according to the skill and interest of the individual student.

Prerequisite: None  
Credit: ½ or 1  
Length: 1 semester or 1 year

### EN 151 – Yearbook II

In Yearbook II, students will continue their work with article writing, page layout, page design, artwork, photographic composition, and computer publishing. In addition students will assume leadership responsibilities and editorial duties.

Prerequisite: Yearbook I  
Credit: ½ or 1  
Length: 1 semester or 1 year

### EN 152 – Journalism I

In Journalism I, students both produce the school newspaper and study the elements of journalism. Students are introduced to the basic elements of composition, layout, and editing. Students will be expected to become

proficient in word processing; article, feature, sports, and editorial writing; using the digital camera or video camera; and retouching pictures using PhotoShop.

Prerequisite: none  
Credit: ½ or 1  
Length: 1 semester or 1 year

### EN 155 – Journalism II

In Journalism II, students will continue their study of journalism. Issues of leadership such as Editor and Internet Editor are the focus of this curriculum. Students will learn and use Quark Passport to layout the newspaper; manage files and articles from Journalism I students; conduct editorial board meetings; make decisions about the content and format of *Vision*, the school newspaper; edit articles and evaluate them for inclusion into the paper; and learn about HTML composition, web site management, and web site publication.

Prerequisite: none  
Credit: ½ or 1  
Length: 1 semester or 1 year

### EN 200 – University English II (College Credit)

Students who take University English II must have a 25 composite score on the ACT by the April national test date of the junior year and complete enrollment requirements for MUW students. The course offers senior students an opportunity to receive dual credit in English from MSMS (English IV requirement) and a study in chronological order of selected masterpieces representative of different periods of English literature from Beowulf through the modern period. Emphasis is given to the historical, intellectual, and social contexts which produced the literature and on the resulting intertext of literature and society. The course includes collateral readings. Students will write a variety of compositions, including critical essays and a research paper.

Prerequisite: Senior standing, admission to MUW, and an ACT Composite of 25  
Credit: 1  
Length: 1 year

**Note:** A year long dual credit course that represents two courses at the university level, will receive the MSMS mid-year grade as the final grade for the first semester university course and the MSMS final year grade will be the final grade for the second semester university course.

### EN 214 – Selected Works of British Literature

Students in this year-long course will read stories, dramas, poems, and essays and view films representative of British and Commonwealth literature. They will consider the works in relation to significant themes and literary movements of the ages which produced them, as well as explore the social and intellectual contexts in which they were written. Special attention will be paid during the second semester to the periods in which the British Empire expanded, then lost, its colonial power. Students will utilize library and Internet sources to produce presentations for class and for compositions, including critical essays and a research paper.

Prerequisite: Senior standing  
Credit: 1  
Length: 1 year (meets 3 days a week)

### EN 216 – World Literature

In order to build on the diversity of students at MSMS, World Literature explores in translation the major writers from the main continents, Europe, the Americas, Africa, the subcontinent of India, China, and Japan from approximately 1650 to the present. Students will be encouraged to pick a culture and an era in the culture and develop a paper as well as a presentation about literature works and their background. Readings will include the major genres of literature: poetry, short story, novel, drama, and essay. Authors such as Goethe, Hugo, Pushkin, Tolstoy, Tagore, Lu Xun, Joyce, Borges, Maufouz, Nobuo, Robbe-Grillet, Yehuda, Saadawi, Eileen Chang among others will be selected to illustrate the qualities and culture of their origin. Students will read about 2000 pages, write about 8 essays, a research paper, and complete a spring project for Globe Day.

Prerequisite: Senior standing  
Credit: 1  
Length: 1 year

## EN 240 – Creative Writing I

Students will practice techniques of poetry and short fiction composition as well as write creative non-fiction pieces. Part of the course requirement is to write for, design, and lay out a literary magazine for both print and electronic publication. Students will prepare manuscripts for local, state, regional, and national competitions. The course will meet for ninety minutes each week for the entire year. Juniors or Seniors may enroll in this course.

Prerequisite: None  
Credit: ½ (elective)  
Length: 1 year (meets one day per week)

## EN 245 – Creative Writing II

Students in Creative Writing II will continue to develop and practice composition techniques for writing poetry, short stories, and descriptive/narrative essays which exhibit mature elements of style: “lucidity, elegance, and individuality.” Students will pursue individualized writing projects in genres they select. Students will also write for, design, and lay out a literary magazine for both print and electronic publication. Students will prepare manuscripts for local, state, regional, and national competitions. The course will meet for ninety minutes each week for the entire year. Juniors or seniors may enroll in this course if they have earned credit in Creative Writing I.

Prerequisite: Creative Writing I  
Credit: ½ (elective)  
Length: 1 year (meets one day per week)

## EN 250 – Special Topics in English

This elective course is based on student interest and may be offered on a one-time or a rotating basis. It may concentrate on a specific topic.

Prerequisite: None  
Credit: ½ (elective credit beyond required 13.0)  
Length: 1 semester

## EN 255- Debate I

This course provides instruction in how to acquire, analyze, and evaluate information in order to organize effective arguments and provides practice in

those arguments. Students will be able to practice extemporaneous speaking, learn the various parts of mock trial by studying both the case and the laws which govern the trial. Students will be able to pose and respond to questions. Students will prepare for mock trial competition. Part of the instruction will be provided by local attorneys.

Prerequisite: None  
Credit: ½ (elective)  
Length: 1 semester

## EN 256 - Debate II

This course provides further instruction in how to acquire, analyze, and evaluate information in order to organize effective arguments and provides practice in those arguments. Students will be able to practice extemporaneous speaking, learn the various parts of mock trial by studying both the case and the laws which govern the trial. Students will learn how to formulate questions in both direct and cross-examination, as well as provide witness responses based upon the case study. Students will prepare for mock trial competition. Part of the instruction will be provided by local attorneys.

Prerequisite: Credit in Debate I  
Credit: ½ (elective)  
Length: 1 semester

## EN 257 - Debate III

This course provides instruction in how to acquire, analyze, and evaluate information in order to organize effective arguments and provides practice in those arguments. Students will be able to practice extemporaneous speaking, learn the various parts of mock trial by studying both the case and the laws which govern the trial. Students will learn all aspects of argument from posing questions, creating and delivering opening speeches and closing arguments, and develop an understanding of all kinds of objections. Students will prepare for mock trial competition. Part of the instruction will be provided by local attorneys.

Prerequisite: Credit in Debate II  
Credit: ½ (elective)  
Length: 1 semester

# FINE AND PERFORMING ARTS

## Introduction

The department of Fine and Performing Arts exists to provide the aesthetic stimulation so necessary to human existence. Students are given the opportunity to excel within the contexts of artistic expression and public performance.

## Guidelines for Required Fine Arts Courses

MSMS requires students to complete **one credit** of fine arts during grades 9-12. Courses such as chorus, band or art taken during the 9<sup>th</sup> and/or 10<sup>th</sup> grades will meet this requirement. If you have never had one of these courses, MSMS has a broad selection from which you may choose. Only one credit of fine arts taken at MSMS may be applied toward the required 13 MSMS credits.

## Objectives

After participation in the existing courses, the student will be able:

- 1) To recognize different styles and genres of music;
- 2) To define a body of musical terms and utilize them in performance;
- 3) To apply knowledge to different performing situations;
- 4) To work within an ensemble situation;
- 5) To understand the cooperation needed to attain a common goal;
- 6) To exhibit inner discipline in a rehearsal setting, applicable to other academic pursuits;
- 7) To gain an understanding of aesthetic expression;
- 8) To gain self-confidence through public performance and art exhibits;
- 9) To use, understand, and appreciate various art mediums;
- 10) To develop and explore artistic talents;

- 11) To develop an individual artistic style through the use of various mediums;
- 12) To use and appreciate the elements and principles of design;
- 13) To appreciate all forms of art for their aesthetic value.

## FA 521 – Drawing I

Drawing I is a studio course with hands-on learning. This course is a basic introduction to drawing in dry media. First, the students will work by observing geometric forms and still-life materials. At this time, an emphasis is placed on understanding values and colors. The importance of directional strokes and proportion will also be stressed. Upon completing several projects, the student should obtain a good foundation on which to develop his/her talent.

Prerequisite: None  
Credit: ½  
Length: 1 semester

## FA 522 – Drawing II

Drawing II is a studio course with hands-on learning. The course objective is to further the study of dry media, primarily on an advanced level of training. The class will learn how to draw the human figure, work with scratchboard, use the effects of sand-blasting, and explore the possibilities of graphic design.

Prerequisite: Drawing I  
Credit: ½  
Length: 1 semester

## FA 523 – Painting I

Painting I is a studio course with hands-on learning. This course will contain an introduction to basic painting techniques using the mediums of watercolor, acrylic and oil. Activities will include the study of the elements and principles of design, the uses of washes with still life as the subject, and the exploration of color, creating various optical illusions.

Prerequisite: None  
Credit: ½  
Length: 1 semester

### **FA 524 – Painting II**

Painting II is a studio course with hands-on learning. This course is a continuation of study in painting techniques using watercolor, acrylic, and oil according to the student's preference. An emphasis will be placed on the old masters and how they developed their techniques which led to their unique artistic styles. Time permitting, entry level calligraphy will be introduced. Stretch canvas, panel board, and quality paper will be the surfaces upon which to work.

Prerequisite: Painting I  
Credit: ½  
Length: 1 semester

### **FA 525 – Sculpture I**

Sculpture I is a studio course with hands-on learning. This is a course in the applied principles and practices in sculpture and constructive design. The student will experience the art of carving, modeling, casting, and construction using a wide variety of materials, such as soap, wire, clay, and plaster of Paris.

Prerequisite: None  
Credit: ½  
Length: 1 semester

### **FA 526 – Sculpture II**

Sculpture II is a studio course with hands-on learning. This course continues the study of three-dimensional art, its design, and construction. The materials used will be those previously studied in Sculpture I. An emphasis is placed on ceramics, the potter's wheel and the creation of a bust made from clay.

Prerequisite: Sculpture I  
Credit: ½  
Length: 1 semester

### **FA 531 – Dramatic Performance**

This course is designed to explore the theatrical process as an art form. Students will concentrate on designing, creating, and performing original and published works.

Prerequisite: Previous theater experience or course work  
Credit: ½  
Length: 1 semester

### **FA 532 – Advanced Dramatic Production**

This course enables students interested in theater arts to further increase their knowledge of dramatic production.

Prerequisite: Dramatic Performance and consent of instructor  
Credit: ½  
Length: 1 semester

### **FA 508 – Songwriting/Music Technology**

This course begins with the study of commercial song structure and writing methods. Students will compose four assigned songs and one freestyle piece throughout the course. The course also includes instruction in digital recording and midi. The course culminates with students recording their original compositions utilizing their knowledge of music technology. Prior knowledge of music theory and the ability to play an instrument is not required but strongly suggested. Course is offered during the spring.

Prerequisite: None  
Credit: ½  
Length: 1 semester

### **FA 510 – Instrumental Performance**

This course is for those students playing string, electronic, brass, woodwind, and percussion instruments. A broad style of music will be explored and small ensembles may be used from within the group. The class will give at least two performances per semester in order to allow students to experience the creative process that is necessary to perform in a truly collective art.

Prerequisite: None  
Credit: ½ (may be repeated)  
Length: 1 semester

### **FA 511 – Choral Performance**

The MSMS Concert Singers will survey several styles of performance including classical four part singing, a cappella, jazz, and Broadway styles. Attention will be devoted to proper breathing and diction techniques, reading music, and professional performance styles. This class is activity based and

will include at least two performances per semester. A solo voice is not necessary but a desire to participate in an artistic process for enjoyment is.

Prerequisite: None  
Credit: ½ (may be repeated for a total of 1 credit)  
Length: 1 semester

### FA 516 – Guitar Studies

This course is for beginning guitar students. Through guitar studies students will study the fundamentals of music theory. Various musical styles, melodic playing, choral accompaniment, solo and ensemble playing will be studied throughout the course. Class size is limited to 10 per semester. Students are required to provide their own guitar. No prior knowledge of the guitar is needed.

Prerequisite: None  
Credit: ½  
Length: 1 semester

### FA 517 – Guitar Performance

Guitar performance class is for those students playing guitar and bass guitar. Many appropriate styles of music will be practiced and performed. Students are required to provide their own instrument. Ability to read music notation is required. Course is offered during both fall and spring semesters.

Prerequisite: Consent of instructor  
Credit: ½  
Length: 1 semester

### FA 565 – Special Topics in Music

This course is based on individual student interest and may be offered on a rotating basis.

Prerequisite: Consent of instructor  
Credit: ½ (elective credit beyond the required 13.0)  
Length: 1 semester

## FOREIGN LANGUAGE

### Introduction

All MSMS graduates must have successfully completed two years of high school foreign language study. It is strongly suggested, though not required, that both credits be in the same language. Those who choose to complete the requirement at MSMS can select from courses in five languages: French, German, Latin, Spanish, and Italian. Foreign language courses offer a strong background in vocabulary, grammar, reading, translation, and pronunciation skills, which will enhance the success of college-bound students in university foreign language courses as well as lay the framework upon which students who travel abroad may sharpen their conversational skills. Emphasis is also placed on the understanding and appreciation of the culture of the target country. Advanced students interested in exploring a foreign language more deeply and who have an ACT of 25 may take courses in the foreign language department of MUW. Software programs such as Rosetta Stone, A+ and Living Language are used in addition to classroom instruction.

### Guidelines for Foreign Language Required Courses

MSMS requires students to take **two years** of foreign language during grades 9-12. Students who have already received credit in 2 foreign language courses prior to entering MSMS have fulfilled this MSMS requirement. Students who have never earned credit in a foreign language course before entering MSMS, **must earn 2 foreign language credits during the junior and senior years.**

**A majority of out-of-state universities require that the two credits of foreign language be in the same language. (example: Spanish I and II)**

### Objectives

Within the study of foreign languages, the student will be equipped:

- 1) To understand and speak, at a beginning level, at least one foreign language;
- 2) Understand the differences between their own culture and that of others;

- 3) To have a heightened awareness and comprehension of their own native tongue; and
- 4) To realize the importance of the study of language and culture as they relate to their country's needs in commerce, diplomacy, defense, and education.

## FRENCH

### FL 801 – French I

This beginning course in French includes the study of pronunciation, instruction, and drill on essentials of grammar, practice in simple conversational skills, vocabulary study, and discussion about cultural aspects of the French-speaking world.

Prerequisite: None  
 Credit: 1  
 Length: 1 year

### FL 802 – French II

French II continues the study of the basic structures of both the oral and the written French language. It includes a continuing review of the important elements learned in French I, while introducing the use of additional verb tenses and pronoun groups. Emphasis is placed on vocabulary expansion, translation, and pronunciation.

Prerequisite: French I  
 Credit: 1  
 Length: 1 year

### FL 803 – French III

French III focuses on strengthening the skills gained in French I and II. Important components of the course include vocabulary expansion, reading from French literature and culture, listening to tapes of native speakers, oral

practice, and carefully guided written composition. A small number of new structures are introduced, and brief reviews of previously-learned vocabulary and grammar are conducted as needed.

Prerequisite: French I and II  
 Credit: 1  
 Length: 1 year

## SPANISH

### FL 811 – Spanish I

This beginning course in Spanish includes the study of pronunciation, instruction, and drill on essentials of grammar, practice in simple conversational skills, vocabulary study, and discussion about cultural aspects of the Hispanic world.

Prerequisite: None  
 Credit: 1  
 Length: 1 year

### FL 812 – Spanish II

Spanish II continues the study of the basic structures of both the oral and the written Spanish language. It includes a continuing review of the important elements learned in Spanish I, while introducing the use of additional verb tenses and pronoun groups. Emphasis is placed on vocabulary expansion, translation, and pronunciation.

Prerequisite: Spanish I  
 Credit: 1  
 Length: 1 year

### FL 813 – Spanish III

Spanish III focuses on strengthening the skills gained in Spanish I and II. Important components of the course include vocabulary expansion, readings from Spanish literature and culture, listening to tapes of native speakers, oral practice, and carefully guided original composition. A small number of new

structures are introduced, and brief reviews of previously learned vocabulary and grammar are conducted as needed.

Prerequisite: Spanish I & II  
Credit: 1  
Length: 1 year

## LATIN

### FL 821 – Latin I

The purpose of this course is to provide students with a linguistic approach that will enable them to read and understand simple Latin works, to apply Latin words and phrases to science, law, medicine, SAT preparation, and to improve the student's ability to use and understand English words.

Prerequisite: None  
Credit: 1  
Length: 1 year

### FL 822 – Latin II

Translation is the language activity practiced through this course. This precise skill requires a sound knowledge of both Latin and English. Upon completion of Latin II, students will be able to translate original Latin texts from classical authors.

Prerequisite: Latin I  
Credit: 1  
Length: 1 year

## GERMAN

### FL 831 – German I

Promoting awareness of diverse cultures is an integral part of this course. The cultural notes and videos are varied; their aim will be to offer insights into the life of German-speaking countries. Communication skills are emphasized through oral drills. Writing skills are encouraged through weekly assignments

in German. Students will read and translate short articles and stories. Computer software programs strengthen the language skills acquired in the classroom. Role play and situational dialogs develop speaking skills.

Prerequisite: None  
Credit: 1  
Length: 1 year

### FL 832 – German II

Upon completion of German II, students will be able to sustain conversations with a German counterpart; to understand and discuss German customs and culture; and to read and translate a German text. Students will be able to write essays, express simple opinions, and write personal letters.

Prerequisite: German I  
Credit: 1  
Length: 1 year

### FL 850 – Advanced Topics in Foreign Language

This course continues the study of a foreign language. It is based on individual student interest and may be offered on a rotating basis.

Prerequisite: Highest level of language of interest, consent of instructor  
Credit: ½ to 1 (elective credit beyond required 13.0)  
Length: 1 semester or 1 year (dependent on course)

## INTERDISCIPLINARY COURSES

### Introduction

The world today is composed of interrelated social, biological, physical, and technological systems that are inherently complex. One of the objectives is to provide students with an avenue to explore connections between seemingly divergent topics. The interdisciplinary courses described below are designed to give students a foundation for developing skills that will allow them to become effective problem solvers.

### **ID 145 – Introduction to American Film**

This course is a study of the development of cinematic techniques and ideals in twentieth-century America. Successful students will complete outside readings, will respond to the literature through critical essays and timed examinations, and will participate in class. (Please note that this course is an elective.)

Prerequisite: None  
Credit: ½ (elective)  
Length: 1 semester

### **ID 150 – Creative Media I**

Students will explore expression through various media such as video, audio, tape, expository or dramatic expression, and print. Students will practice the technological aspects of the media and the movement, enunciation, projection, and characterization of the dramatic arts necessary to prepare for a final multimedia, multidisciplinary production.

Prerequisite: Consent of instructor  
Credit: ½ (elective)  
Length: 1 semester

### **ID 155 – Creative Media II**

This hands-on course focuses on the use of the computer as the primary tool in the editing and creation of productions. Students will learn to use a high-level video capture board, multimedia editing and bit-editing programs, a three-dimensional graphics generator, and methods for generating a video production in the computer to print to video tape. Special experiences with demonstrated knowledge of video production may serve as a prerequisite.

Prerequisite: Creative Media I  
Credit: ½ (elective)  
Length: 1 semester

### **ID 160 – Foundations of Western Thought**

Students will read and discuss selected works of some of our culture's most influential intellectual figures. The development of philosophical traditions will

be traced beginning with Plato, Aristotle, Epicurus, Zeno, and Augustine, continuing through Rousseau, Kant, Nietzsche, Freud, and Sartre.

Prerequisite: None  
Credit: ½ (elective)  
Length: 1 semester

### **ID 180 – Health**

This course will cover the mental, emotional, and social health of the individual. It also studies stress and means of handling life. The course is an outstanding study for the improvement of the quality of health. It includes 10 lessons and 2 tests and is an on-line course. Students who have not taken health prior to attending MSMS, must complete health by the end of their junior year.

Prerequisite: None  
Credit: ½  
Length: 1 semester

Note: Health will not count toward the 13 MSMS required credits.

## **MATHEMATICS**

### **Introduction**

Mathematics has a long impressive record of contributions to discovery and problem solving in science and technology, decision making in business and government, and creative expression in the arts. This record of achievement has earned mathematics a prominent place in school curricula. We live in a world where the emphasis has shifted the demands of mathematics to prepare technologically advanced students who can solve real-world problems and who can communicate those solutions. The Mississippi School for Mathematics and Science mathematics curriculum emphasizes exploration, investigation, reasoning, and communication for all students.

### **Guidelines for Mathematics Required Courses**

Students are required to enroll in at least one math course each semester. After completing Algebra II, Trigonometry and either Foundations for Higher

Math or Math Modeling, each student will choose to complete one semester from one of the following curricula:

- (1) Statistics – For students preparing to study in areas such as social sciences, humanities, business.
- (2) Calculus – Prepares students to study the sciences, mathematics, or technical areas such as engineering or computer science.

### Objectives

In an effort to implement the National Council of Teachers of Mathematics Standards, the mathematics curriculum objectives are:

- 1) To utilize methods of mathematical modeling and problem solving.
- 2) To provide opportunities for reinforcement and extension of logical reasoning and higher-order thinking skills.
- 3) To encourage investigations of the connections among various mathematical topics and their applications.

Special emphasis is placed on writing, research, appropriate use of technology, and student-designed projects in order to enhance the implementation of the department's curricular goals.

**All students must have earned credit in Algebra I and Unified Geometry before entering MSMS.** It is strongly recommended that Algebra II be completed also. In the event that a student has completed Algebra I and Algebra II, but does not have a credit for Unified Geometry, the student must take a Unified Geometry course either by correspondence, virtual school or summer school offerings. This credit must be earned before the beginning of the school year. A course in Unified Geometry will not be taught at MSMS.

### MA 211 – Accelerated Algebra II (Juniors)

Accelerated Algebra II is the full Algebra II course covered in one semester. The course is a continuation and extension of the skills developed in Alg. I. Topics will include: the complex number system, linear and quadratic

equations, relations and functions, polynomials, rational expressions and equations, and logarithmic and exponential expressions and equations.

Prerequisite: Algebra I, Unified Geometry  
Credit: 1  
Length: 1 semester

### MA 220 – Trigonometry

This course provides a comprehensive study of trigonometric functions with an emphasis on application. Topics will include circular functions and their graphs, triangle trigonometry, identities and equations, and vectors. **Trig may be taken along with or after Foundations/Math Modeling, but should NOT be taken prior to Foundations/Math Modeling.**

Prerequisite: Unified Geometry, Algebra II  
Corequisite: Foundations  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### MA 235 – Foundations for Higher Math (Juniors)

Solving real-world problems frequently requires advanced statistical and mathematical techniques. This course provides the foundations for these techniques while giving them a hands-on approach to many such problems. Skills required for both Calculus and Statistics will be thoroughly developed. Individual and team skills will be enhanced as the students investigate models, perform experiments and analyze data. All students are required to take either MA 235 or MA 236.

Prerequisite: Unified Geometry, Algebra II  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### MA 236 – Math Modeling (Juniors)

Offered as an alternative to MA 235 for those juniors who have had precalculus and/or advanced math or who have had a strong mathematical background (substantiated by scores on the MSMS Mathematics Pretest) and have a desire to be in the class. This course provides the foundations for higher mathematics courses from a math modeling perspective. Students investigate, find models, determine strengths and weaknesses of models and create summaries of their findings. The topics for the real-world problems

generally relate to the Foundations for Higher Mathematics curriculum, but also include techniques that would better prepare students for the Math Modeling Competition.

Prerequisites: Unified Geometry, Algebra II, Precalculus or its equivalent, and/or math department approval  
Credit:  $\frac{1}{2}$   
Length: 1 semester

## **CALCULUS OPTIONS**

Students electing to pursue Calculus as their higher math option may begin with either Differential Calculus (MA 242), or a college level dual credit University Calculus I (MA 244).

### **MA 244 – University Calculus I (2<sup>nd</sup> Semester Juniors, Seniors)**

This course is equivalent to MA 181 Calculus I offered by Mississippi University for Women. It is a thorough treatment of differential calculus including the concepts of limits, continuity, derivatives and application of derivatives. (Not open to first semester juniors.)

Prerequisites: Trigonometry, B or higher in Foundations or Math Modeling, and/or satisfactory score on the MSMS math placement test  
Credit:  $\frac{1}{2}$  MSMS and 3 hours college credit  
Length: 1 semester

### **MA 242 – Differential Calculus**

This course is offered as a beginning to the calculus sequence for those students who choose not to take the college level University Calculus I or who do not qualify. This course provides an introduction to differential calculus. Topics include limits, continuity, derivatives and their applications.

Prerequisites: Trigonometry and Foundations or Math Modeling  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 248 – University Calculus II**

This college level course is equivalent to MA 182 Calculus I offered by Mississippi University for Women. It is a thorough treatment of integral

calculus including Riemann sums, applications of integrals and techniques of integration, as well as the calculus of transcendental functions.

Prerequisites: B or higher in MA 244 University Calculus I  
Credit:  $\frac{1}{2}$  MSMS; 3 hours college credit  
Length: 1 semester

### **MA 246 – Integral Calculus**

This course provides an introduction to some theory, techniques and applications of integral calculus. Derivatives of transcendental functions are included in the discussion of integration as it applies.

Prerequisites: MA 242 Differential Calculus  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 252 –Calculus III**

This course extends the techniques of differential and integral calculus to the study of polar and parametric equations, along with vector-valued functions of several independent variables. There is a thorough coverage of infinite series including Taylor Series.

Prerequisite: University Calculus II with a grade of B or above  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 254 – Differential Equations**

This course will provide an investigation of differential equations through analytical techniques and numerical methods. Applications will be stressed throughout so that the interrelationship of pure mathematics, modeling and the physical sciences may be developed. Technology will play a significant role as students will be required to use MAPLE and EXCEL. Major topics include first order, second order, and systems of differential equations.

Prerequisite: University Calculus II or consent of instructor  
Corequisite: Calculus III  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### MA 260 – Investigations in Geometry

This course will examine Euclidean and non-Euclidean geometry, topology, dimensions and fractals. This is a survey of topics class with hands-on and computer investigations, and required reading. Students are required to read *Flatland* and *Jurassic Park*. This course will not satisfy credit for Unified Geometry.

Prerequisite: Unified Geometry, Algebra II  
Corequisite: Foundations  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### MA 261 – Explorations in Mathematical Art

This course will investigate the geometry of constructions, transformations, and tessellations. Students will explore mathematical techniques used in selected art work. The course will use technology, including spreadsheets and Geometer's Sketchpad.

Prerequisite: Unified Geometry, Algebra II  
Corequisite: Foundations  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### MA263 -- History of Mathematics

This course will explore the mathematical development of ideas and problem-solving techniques throughout history. Student research and creative presentations will be required. Offered spring semester.

Prerequisite: Unified Geometry, Algebra II  
Corequisite: Foundations  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### MA 264 – Logic and Game Theory

This course is a study of logic, symbolic notation, truth tables, simple game theory, and problem-solving strategies.

Prerequisite: Unified Geometry, Algebra II  
Corequisite: Foundations

Credit:  $\frac{1}{2}$   
Length: 1 semester

## STATISTICS OPTIONS

Students electing to pursue Statistics as their higher math option may begin with either Statistics I (MA 268), or a college level dual credit University Statistics I (MA 269).

### MA 269 – University Statistics I (Seniors only, except by special permission for advancement)

This course is equivalent to MA 123 Statistics I offered by Mississippi University for Women. It is an introduction to basic applications of descriptive and inferential statistics; organizing data, mean, median and mode, and standard deviation, boxplots, probability and discrete random variables, the binomial distribution, the normal distribution, sampling distribution of the mean, confidence intervals and hypothesis tests for one population mean, the chi-square distribution. Use of technology and technology projects will be integrated throughout the course.

Prerequisite: Senior standing or instructor approval, B or higher in Foundations or Math Modeling  
Credit:  $\frac{1}{2}$  MSMS; 3 hours college credit  
Length: 1 semester

### MA 268 – Statistics I (Seniors only, except by special permission for advancement)

This course is a study of descriptive statistics, probability concepts, normal distributions, regression models, design of experiments, and an introduction to inferential statistics. Use of technology will be integrated throughout the course.

Prerequisite: Senior standing or instructor approval, Foundations or Math Modeling  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 275 – Number Sense (Seniors only, except by special permission for advancement)**

This course will provide a study of number patterns, number relationships, and topics from number theory. Emphasis will be placed upon applications, problem solving, discussion, investigation, and competitive team practice.

Prerequisite: Unified Geometry, Algebra II, Foundations  
AND Consent of instructor  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 280 – Discrete Mathematics**

The mathematical foundations of computer science shall be introduced with a focus on logic and mathematical reasoning. Topics will include propositional logic, set theory, Boolean algebra, number theory, and counting principles. Lectures will be reinforced with exploratory exercises using *Maple*.

Prerequisite: Algebra II  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 271 – Statistics II**

This course uses in-depth investigations with descriptive and inferential statistics: projects, design of experiments, hypothesis testing with matched pairs, two means, proportions, and regression.

Prerequisite: University Statistics I or Statistics I  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### **MA 290 – Special Topics**

Independent study includes examination and discussion of mathematical topics outside the standard curriculum. This is for advanced students or students with special needs.

Prerequisite: Consent of instructor, permission of Director for Academic Affairs  
Credit:  $\frac{1}{2}$  (elective credit beyond required 13.0)  
Length: 1 semester

## **SCIENCE**

### **Introduction**

The purpose of the science department of the Mississippi School for Mathematics and Science is to give students a broad overview of the sciences and to make them scientifically literate in each of the major subject areas: biology, chemistry, and physics. Emphasis is placed on mastery of basic concepts and laboratory skills through course lectures and discussions, laboratory investigations, field trips, tours, special projects, guest lecturers, and direct involvement with researchers at the college level. Students are given the opportunity to pursue their particular interests through elective courses and independent research.

### **Guidelines on Required Science Courses**

In general, students complete two credits of science during the junior year and the third credit of science and one-half swing credit during the senior year (or some variation of this sequence). The objective is to achieve a balance throughout your two years at MSMS.

All students are required to earn a minimum of three credits in science by successfully completing one credit each in Biology, Chemistry and Physics at **MSMS**.

- (1) Biology - Course selection may be determined by student interest and career plans.
- (2) Chemistry – Students who have not completed a year of chemistry at their home school must enroll in general chemistry (SC 350) during their junior year.
- (3) Physics - Students must complete one semester of mechanics followed by one semester of waves. It is recommended that students have completed Trigonometry before enrolling in Mechanics.

### **Objectives**

- 1) To prepare the student for success in college, specifically in the sciences.

- 2) To teach content so as to encourage critical thinking and the application of scientific principles to problem solving.
- 3) To prepare the student to read and appreciate scientific literature.
- 4) To prepare the student to be able to make intelligent choices concerning scientific issues.

## BIOLOGY COURSES

### Guidelines for Required Biology Courses

Course selection may be determined by student interest and career plans. All biology courses are laboratory based and meet four days per week.

#### SC 312 – Cell Biology

This course involves the study of the biology of cells from the molecular to the microscopic level of organization. Prokaryotic and eukaryotic cells will be considered. Cellular architecture and physiology will be considered in the context of biological macromolecules and their building blocks.

Prerequisite: None  
 Credit: ½ (biology)  
 Length: 1 semester

#### SC 313 – Microbiology

Microbiology is the study of microorganisms; this class focuses predominantly on bacteria emphasizing central themes of cellular biology and the scientific method. This course is a laboratory-based course (lectures are integrated with labs) in which the students learn the fundamental techniques of the discipline. In the latter part of the semester, the students are required to do an intensive independent project of their design that applies the techniques they have learned.

Prerequisite: Cell biology  
 Credit: ½ (biology)  
 Length: 1 semester

#### SC 314 – Anatomy and Physiology

This course is designed for the student who has completed a course in general biology or cell biology. Emphasis is placed on the structure and function of the human body and homeostatic mechanisms. The physiological systems to be examined are integumentary, skeletal, muscular, nervous, endocrine, respiratory, excretory, circulatory, and reproductive. Students will utilize readings from periodicals or books to extend understanding of topics, perform a research project, and write a research paper based on the project.

Prerequisite: None  
 Credit: 1 (biology)  
 Length: 1 year

#### SC 318 – Genetics

This course is a study of the principles of heredity and the nature of genetic material. It is divided into three sections: Mendelian genetics, Molecular genetics, and Population genetics. This course is presented in the context of evolutionary biology. It also serves as an introduction to recombinant DNA technology and addresses the current social, legal, and ethical issues raised by these modern molecular techniques.

Prerequisite: Cell biology  
 Credit: ½ (biology)  
 Length: 1 semester

#### SC 319 – Molecular Biology

This course will survey molecular genetics from the history of the biological revolution to recombinant DNA technology to genetic engineering. It is designed to be lab oriented with emphasis on recombinant DNA experimentation. The lecture portion of the course is based on the biochemistry of genetics. Students should have completed Genetics, and Chemistry or equivalent before taking this course. Knowledge of how molecules are formed and combined will be especially helpful.

Prerequisite: Genetics, Chemistry or consent of instructor  
 Credit: ½ unit (biology)  
 Length: 1 semester

#### SC 320 – Ecology of Environmental Problems

This course examines environmental problems from an ecological perspective. Initially, the course considers the relationships between organisms and their environment; an introduction to the physiological bases

for adaptations, population dynamics (both human and non-human), community organization; and the structure and function of ecosystems (including atmosphere, climate, and weather). Interdisciplinary methods of analysis will be used to explore natural systems while scrutinizing resource management strategies, pollution, economic factors (local and global), and the politics of environmental problems.

Prerequisite: None  
Credit: ½ (biology)  
Length: 1 semester

### **SC 322– Human Infectious Diseases (Seniors, recommended)**

Infectious diseases have and will profoundly shape the destiny of man. This course is taught using a Problem Based Learning (PBL) approach and emphasizes the study of both the aetiology of infectious diseases and their ramifications. It is intended for the student who has been successful in Microbiology and has the drive and maturity to discuss topics of historical and global significance. The topics addressed will largely be determined by the class and are usually reflective of current (often ongoing) disease outbreaks monitored using ProMED and other electronic resources. Intensive laboratory work will typically be done in small groups and will reflect the topics studied in class culminating in a paper written in a professional format.

Prerequisite: Microbiology required

Credit: ½ (biology)  
Length: 1 semester

### **SC 324 – Special Topics in Biology**

This course is designed to give students an opportunity for individualized learning in biology. The student will select faculty advisors and with their help, choose a particular biology problem of interest and pursue the problem.

Prerequisite: Consent of the instructor  
Credit: ½ (elective credit beyond the 13.0 required)  
Length: 1 semester (with the option to repeat the course for another ½ credit)

### **SC 360 – Introduction to Biochemistry (Seniors)**

This is a senior-level course designed as an intensive survey of biological molecules-proteins, nucleic acids, lipids and carbohydrates. The major emphasis will be on proteins, but a portion of the course will also be dedicated to nucleic acid, lipid and carbohydrate structure, and metabolism.

Prerequisite: Cell Biology and one year of Chemistry at MSMS or consent of instructor; Organic Chemistry is recommended  
Credit: ½ (chemistry or biology)  
Length: 1 semester

## **CHEMISTRY COURSES**

### **Guidelines for Required Chemistry Courses**

**Students not enrolled in General Chemistry or AP Chemistry must take at least one semester of chemistry during their junior year.** All juniors entering MSMS who have not completed and earned credit in a year of chemistry must enroll in General Chemistry (SC 350) during their junior year. Chemistry course selection for students who have earned a credit in chemistry prior to attending MSMS will be determined by a chemistry placement test (for those interested in taking Advanced Placement Chemistry) and student interest. All chemistry courses are laboratory based. AP Chemistry meets 5 days per week.

### **SC 350 – Chemistry (Juniors)**

**This course is for the student who has never had chemistry.** The course provides an introduction to measurement, periodicity, atomic theory, bonding, nomenclature, stoichiometry, gas laws, solutions, kinetics, acids and bases, equilibrium, electrochemistry, oxidation-reduction, and nuclear chemistry. Emphasis is placed on descriptive chemistry and problem solving.

Prerequisite: None  
Credit: 1 (chemistry)  
Length: 1 year

### **SC 353 – Advanced Topics in Chemistry I**

This course is designed to give students who have previously had chemistry additional exposure to topics which will prepare them for more advanced chemistry courses. These topics include stoichiometry, atomic structure and trends in the periodic table, chemical kinetics and equilibrium, and thermochemistry.

Prerequisite: Chemistry  
Credit: ½ (chemistry)  
Length: 1 semester

### SC –Advanced Topics II

Advanced Topics II is designed to be a continuation of Advanced Topics I. It will give the student further exposure to topics in chemistry which they may not have covered in their previous courses but which are necessary to be prepared for more advanced courses and for college chemistry. These topics include liquids and solids, solutions, acids and bases, applications of aqueous equilibrium, thermodynamics, electrochemistry, nuclear chemistry, and organic chemistry. We will typically have lab more than once per week.

Prerequisite: Advanced Topics I  
Credit: ½ (chemistry)  
Length: 1 semester

### SC 355 – AP Chemistry

This course provides an in-depth study of the principles of modern chemistry and should prepare the student for the AP exam in chemistry. This course requires several hours of study time beyond that required in other courses as well as a laboratory assignment for each week.

Prerequisite: One year of Chemistry and passing score on the chemistry placement test  
Credit: 1 (chemistry)  
Length: 1 year

### SC 357 – Organic Chemistry (Seniors)

This course is designed to be an introduction to the basic principles of organic chemistry. Topics to be covered include nomenclature, elementary reactions of functional groups, stereochemistry, and isomerism.

Prerequisite: One year of Chemistry  
Credit: ½ (chemistry)  
Length: 1 semester

### SC 360 – Introduction to Biochemistry (Seniors)

This is a senior-level course designed as an intensive survey of biological molecules-proteins, nucleic acids, lipids and carbohydrates and their interactions from a cellular level to an atomic description. The major emphasis will be on proteins, but a portion of the course will also be dedicated to nucleic acid, lipid and carbohydrate structure, and metabolism.

Prerequisite: Cell Biology and one year of Chemistry at MSMS or consent of instructor; Organic Chemistry is recommended  
Credit: ½ (chemistry or biology)  
Length: 1 semester

### SC 364 – Analytical Chemistry (Seniors)

This course is designed to introduce the student to the methods used in the quantitative analysis of chemical compounds. This includes classical gravimetric and volumetric methods as well as modern methods such as spectrometry and chromatography. The course also includes a brief overview of statistical methods used in data analysis. The class is primarily lab-based, but does include some out-of-class work. The class is a senior level course and is offered in the spring semester.

Prerequisite: Advanced Topics or higher chemistry  
Credit: ½ (chemistry)  
Length: 1 semester

### SC 325 – Special Topics in Chemistry (Seniors)

This course is designed to give the student an opportunity to for individualized learning in chemistry. The student will select faculty advisors and with their help, choose a particular problem of interest in chemistry and pursue the problem.

Prerequisite: Consent of the instructor  
Credit: ½ (elective credit beyond 13.0 required)  
Length: 1 semester (with option to repeat for another ½ credit)

## PHYSICS COURSES

### Guidelines for Required Physics Courses

Physics - Students must complete one semester of mechanics followed by one semester of waves. **It is recommended that students have completed Trigonometry before enrolling in Mechanics.** Entering juniors who wish to complete two full years of physics (both algebra/trigonometry-based and calculus-based) should enroll in Advanced Mechanics, the college-level algebra/trigonometry-based course, during the fall of their junior year.

**Note concerning Physics graduation requirements:** Students may not apply credit from **both** SC 331 **and** SC 335 toward the one required credit in Physics.

### SC 331 – Mechanics

Successful completion of this algebra and trigonometry-based course will familiarize students with the laws of mechanics and their applications.

Prerequisite: Geometry, Algebra II  
Corequisite: Trigonometry  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 332 – Waves, Electricity, and Magnetism

Successful completion of this algebra and trigonometry-based course will provide a solid foundation in the principles of waves, electricity, and magnetism.

Prerequisite: Mechanics, Trigonometry  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 335 – University Advanced Mechanics (College credit)

Successful completion of this college-level, algebra and trigonometry-based course will provide a solid conceptual and mathematical foundation in the principles of both classical and fluid mechanics, along with their applications.

In addition to assignments made from a college text along with a variety of outside reading assignments students are expected to utilize the Internet and the MSMS network to avail themselves to a variety of tutorial materials.

Prerequisite: Unified Geometry, Algebra II, consent of the instructor, and Admission to MUW  
Corequisite: Trigonometry  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 336 – Adv. Waves, Electricity, & Magnetism

Completion of this algebra and trigonometry-based course will provide a solid foundation in the principles of mechanical and electromagnetic waves as well

as electricity and magnetism. In addition to assignments made from a college text along with outside reading, students are expected to take advantage of the available technology for tutorial purposes.

Prerequisite: Mechanics, Trigonometry  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 337 – Calculus-Based Mechanics

This lecture/laboratory course covers the fundamental principles of Newtonian mechanics with an emphasis on calculus derivations. Topics include kinematics, Newton's Laws, collisions and conservation laws, work and energy, rotational motion, statics, harmonic motion, and universal gravitation.

Prerequisite: University Calculus I and one year of physics at MSMS or approval of instructor  
Corequisite: University Calculus II or equivalent  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 338 – Calculus-Based Electricity and Magnetism

This lecture/laboratory course covers the fundamental principles of electromagnetism with an emphasis on calculus derivations. Topics include electric fields, magnetic fields, and circuits with resistors, capacitors and inductors. The major laws of this subject are developed including Coulomb's Law, Gauss's Law, Faraday's Law, and the Biot-Savart Law ultimately leading to Maxwell's Equations.

Prerequisite: Calculus-Based Mechanics  
Corequisite: MSMS Waves, Electricity & Magnetism course  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 339 – Modern Physics

The course provides a trigonometry based survey of the physics developed during the twentieth century, including relativity, atomic and nuclear structure, wave-particle duality, early quantum mechanics, nuclear energy and an introduction to elementary particles. Some knowledge of classical physics is a necessary prerequisite.

Prerequisite: Mechanics  
Co-requisite: Waves/E&M or consent of instructor  
Credit:  $\frac{1}{2}$   
Length: 1 semester

### SC 344 – Astronomy/Astrophysics

The class will introduce the Earth & Moon system, the sky and seasons, the origin of the Solar System, the planetary geology of the terrestrial planets, the recent exploration of the outer planets, the outer solar system, and the varieties of stars in the Universe from their birth to destruction.

Corequisite: Mechanics or consent of instructor  
Credit: ½  
Length: 1 semester

### SC 345 – Electronics

This course is offered to allow students an opportunity to develop expertise in the area of electronics. Assignments will be made from both text and laboratory designs. Students can gain familiarity with microprocessors, digital circuits, and analog circuits in this course. A major part of the grade will be a final project.

Prerequisite: Consent of the instructor  
Credit: ½  
Length: 1 semester

### SC 346 – Special Topics in Physics

This course is designed to give the student an opportunity for individualized learning in physics. The student will select faculty advisors and with their help, choose a particular physics problem of interest and pursue the problem.

Prerequisite: Consent of instructor  
Credit: ½ (elective credit beyond required 13.0)  
Length: 1 semester (with the option to repeat the course for another ½ credit)

## SOCIAL SCIENCE

### Introduction

The capacity to reason reflectively and constructively concerning the problems of man and his world will be the major goal of instruction in the social sciences. Sub-goals will include providing students with opportunities to acquire depth and precision of understanding in handling concepts and ideas rather than additions to the store of facts. In addition, social science courses will develop the ability to think abstractly, critically, and reflectively with social

science data. The social science curriculum will also concern itself with respect for the facts, open-mindedness, and participation in group action of a kind that reflects a desire on the part of the participant to seek solutions to social problems.

### Guidelines on Social Science Required Courses

Students who have not earned credit in U.S. History in grades 9 or 10, must complete one credit during the junior year. **U.S. History is required of all students who come to MSMS** without a credit in U.S. History. Students who have not earned a full credit of World History prior to entering MSMS need to do so during the junior year. There are a variety of ways to meet this requirement. **American Government is reserved for the senior year.**

### Objectives

Within the study of social sciences, students will be equipped:

- 1) To understand the broad sweep of both ancient and contemporary ideas that have shaped our world;
- 2) To understand the fundamentals of how our economic system works and how our political system functions;
- 3) To grasp the difference between free and repressive societies; and
- 4) To demonstrate this understanding through informed and committed exercise of citizenship.

### SS 600 – United States History: Imperialism to New Frontier

This course surveys United States History from 1877 and is required of all students needing to fulfill the US History graduation requirement set by the Mississippi State Department of Education. Course topics include, but are not limited to: The Rise to Industrial Supremacy, the Age of the City, the Populist Movement, American Imperialism, the Progressive Movement, America and the Great War, the New Era (“Roaring Twenties”), the Great Depression, the New Deal, the Second World War, the Cold War, the Affluent Society of the 1950s, the Korean War, the Civil Rights Era – the Early Years, and the Vietnam War – the Early Years. The course will include use of a textbook, lecture, outside readings, current event materials and research projects.

Prerequisite: None  
Credit: 1 unit  
Length: Year

### **SS 603 – United States History: Imperialism to New Frontier (Research focus: Tales from the Crypt)**

This section includes the award-winning “Tales from the Crypt” research/performance project. Students conduct primary and secondary research on an individual buried in Historic Friendship Cemetery. After completing a research paper, students develop dramatic vignettes performed during candlelight cemetery tours in the spring.

Prerequisite: None  
Credit: 1 unit  
Length: Year

### **SS 612 – World Geography**

This course focuses on the study of world geography through current world problems. Students study the world’s major regions and the United States’ role in world affairs while exploring how culture influences the decisions of world leaders and how economics, geography, and history have influenced the political systems of the world. Students also explore the relationship among people, places and environments; the concept of regional identities; the global competition for natural resources; and the modification of our physical environment. The course includes the use of current event materials and a variety of research tools. This course meets the ½ credit Geography graduation requirement.

Prerequisite: None  
Credit: ½  
Length: 1 semester

### **SS 615 – Mississippi Crossroads I: Faulkner, the Blues, and Beyond**

This course will examine the sources and themes of 20<sup>th</sup> century Mississippi artistic and cultural expression as they emerge from and contribute to a social, historical, political, and cultural milieu. Topics addressed in this course will include the music and traditions of the Mississippi Delta and the Northeast Mississippi Hill Country, along with the Civil War. Students will prepare for oral and written presentation and will have the opportunity through field trips to experience the living history and culture of our state.

Prerequisite: None  
Credit: ½ (elective or may be used to complete *Mississippi Studies* requirement)  
Length: 1 semester

### **SS 620 – Mississippi Crossroads II: Welty, Wright, Williams, and Beyond**

This course will examine the sources and themes of 20<sup>th</sup> century Mississippi artistic and cultural expression as they emerge from and contribute to a social, historical, political, and cultural milieu. Topics addressed in this course will include the Civil Rights Era in Mississippi; and the music and traditions of Southwest Mississippi. Students will prepare for oral and written presentation and will have the opportunity through field trips to experience the living history and culture of our state.

Prerequisite: None  
Credit: ½ (elective or may be used to complete *Mississippi Studies* requirement)  
Length: 1 semester

### **SS 625 – Modern European History**

Course includes, but is not limited to study of the Black Death, the Renaissance including art and music, the Age of Exploration, the Reformation, the English Civil War, Scientific Revolution, French Revolution, Napoleon, Imperialism, and WWI. The course will include use of a textbook, lecture, outside readings, current event materials, field trips, and research projects. This course meets the World History requirements set by the Mississippi State Department of Education.

Prerequisite: None  
Credit: 1 unit  
Length: 1 year

### **SS 626 – University Western Civilization (College credit)**

History of Modern Civilization offers qualifying students an opportunity to receive dual credit in World History from MSMS (the World History requirement) and from Mississippi University for Women (His 102). This course surveys the history of civilization from approximately 1300 until the present with an emphasis on the West regarding crucial events, individuals, and institutions. Central goals are to develop the talent to read historical material effectively, formulate clear and coherent arguments, think constructively about historical issues, and transmit ideas through written material. The format of the class is primarily discussion of assigned readings.

Prerequisite: Admission to MUW  
Credit: 1 unit high school credit; 3 college credits  
Length: 1 year

## SS 650 – Economics

This course will focus on basic economic principles and explore the differences between capitalism, socialism, and communism. The course provides the student with an understanding of the problems of the current U.S. economy. The course will include the use of a textbook, lecture, outside reading, and current events.

Prerequisite: None  
Credit: ½  
Length: 1 semester

## SS 655 – American Government

This course will include a thorough study of the constitution and the amendments as well as the three branches of government. The course will focus on political decision making and include selected Supreme Court decisions as well as other documents illustrating the processes of government. The course will include the use of a textbook, lecture, outside readings, and current event materials.

Prerequisite: Senior standing  
Credit: ½  
Length: 1 semester

## SS 660 – Psychology

This course will provide effective and broad coverage of the field of psychology, including theories, research, and applications. The course is designed to foster an appreciation for the scientific basis of psychology and to build an appreciation of how psychology can increase understanding of the world.

Prerequisite: None  
Credit: ½  
Length: 1 semester

## SS 690 – Special Topics in Social Science

This course is based on individual student interest and may be offered on a one-time or rotating basis. It may concentrate on a specific topic.

Prerequisite: None  
Credit: ½ (elective credit beyond required 13.0)  
Length: 1 semester

# SPECIAL STUDY OPTIONS

## Guidelines on Special Study Options

Mentorship, Introduction to Research, and Special Topics courses **are not open to incoming juniors during the fall semester** but may be available to juniors in the spring semester. If you are interested, check with your counselor in the late fall.

### MN 101 – Mentorship

This course will provide select students with hands-on experience in a chosen area of work. Students will be placed in an actual work environment in a career field that interests them or an area they will pursue as a college major. Only students who have shown strong commitment to the MSMS ideals of Scholarship, Service, Creativity, and Community and have demonstrated the ability to do exceptional work at MSMS will be placed in mentorship. The student will spend approximately four hours per week with a mentor and attend periodic meetings with other students in the program. **Up to 2 credits of mentorship can be earned at MSMS. However, only the 2<sup>nd</sup> ½ credit will count toward the 13 MSMS required courses.** Course may be repeated.

Prerequisite: Approval of the Director for Academic Affairs  
Credit: ½ (elective)  
Length: 1 semester

### RE 101– Research

This course is designed to introduce the student to the methodologies employed in research. Extensive out-of-class work is required for successful completion of this course. It is expected that the research performed by the student will lead to a written paper and an oral presentation. Research opportunities exist in numerous departments at universities in addition to on-site research at MSMS and summer research programs. Students are required to enroll in a minimum of two semesters of research. **Up to 2 credits of research can be earned at MSMS. However, only the 2<sup>nd</sup> ½ credit will count toward the 13 MSMS required courses.** Course may be repeated.

Prerequisite: Approval of the Director for Academic Affairs  
Credit: ½ (elective)  
Length: 1 semester