

Malone Schools ONLINE NETWORK

2016 - 2017

MSON COURSE CATALOG

Malone Schools

The Malone Schools Online Network (“MSON”) provides upper level students at registered Malone Schools with a variety of superior online courses that enhance each member school’s existing curriculum. These courses promote the values of the Malone Family Foundation and are conducted by teaching professionals that are experts in their fields, have experience with independent school education, and share a commitment to excellence, small class sizes, and personal relationships. Course offerings target the most talented high school juniors and seniors¹ who demonstrate sufficient independence and commitment to succeed in a virtual discussion seminar setting.



Malone Schools
Online Network
(MSON)

Each course takes a blended approach, combining synchronous instruction, real-time video conferencing seminars, with asynchronous instruction, recorded lectures and exercises students complete outside of the class. The result is somewhere between a “flipped classroom” and a “virtual Harkness table.” Each course has a minimum of 6 students and a maximum of 16 students, allowing for a virtual discussion seminar, and is delivered in high-definition classroom set-ups.

Participating Schools (2016-2017)

Canterbury School (IN)	Newark Academy (NJ)
Casady School (OK)	Porter-Gaud School (SC)
Chadwick School (CA)	St. Andrews Episcopal School (MS)
The Derryfield School (NH)	Severn School (MD)
Fort Worth Country Day School (TX)	Stanford Online High School (CA)
Hopkins School (CT)	Trinity Preparatory School (FL)
Indian Springs School (AL)	University School in Nashville (TN)
Manlius Pebble Hill School (NY)	Waynflete School (ME)
Maret School (DC)	Wilmington Friends School (DE)
Mounds Park Academy (MN)	Winchester Thurston School (PA)

¹ Astronomy is targeted toward students in grades 9 and 10. Introduction to Computer Programming and App Design and Development are open to all high school students.

2016-2017 COURSE DESCRIPTIONS

MSON courses last a minimum of 15 weeks each semester. The first semester will run from Wednesday, September 7 to Friday, December 16; Second semester will begin on Tuesday, January 3 and run until Friday, May 12 (there will be two weeks off for spring break—exact dates to be determined). There may be times (Columbus Day, President’s Day, etc.) when an individual school declares a holiday, but MSON classes will remain in session and may require remote attendance. Note that the following course descriptions are subject to change.

Language Offerings

ANCIENT GREEK I (Language and Literature) (full year)

TEACHER: David Harpin, Hopkins School, New Haven CT

No Prerequisite

This is a beginning course for students who have not studied ancient Greek before or whose background in Greek is not sufficient for more advanced work. Students proceed through a study of grammar and vocabulary to the reading and writing of sentences and short narratives in the language of Athens of the fifth century B.C.E. Selected topics in Greek history and art are also considered.

Time Band: This course has a split time schedule – Monday 1:15-2:15pm / Wednesday 10-11am EST

ARABIC I (first part of a two-year sequence) (full year)

Section 1: TEACHER: TBD, Hopkins School, New Haven CT

Section 2: TEACHER: Kaveh Niazi, Stanford Online High School, Stanford CA

No Prerequisite

This course is an introduction to Modern Standard Arabic, the language of formal speech and most printed materials in the Arab-speaking world. Students will learn to read and write the Arabic alphabet and will develop beginning proficiency in the language. Through frequent oral and written drills, students will develop their basic communication skills.

Time Band:

Section 1: Monday / Thursday 12:10 – 1:10 pm EST.

Section 2: Monday / Thursday 4:40 – 5:40 pm EST.

ARABIC II (second part of a two-year sequence) (full year)

TEACHER: TBD, Hopkins School, New Haven CT

Prerequisite: Arabic I

This course is a continuation of the introduction to Modern Standard Arabic, the language of formal speech and most printed materials in the Arab-speaking world. Students will learn to read and write the Arabic alphabet and will develop beginning proficiency in the language. Through frequent oral and written drills, students will develop their basic communication skills.

Time Band: Tuesday / Friday 12:10 – 1:10pm EST

CHINESE V (full year)

TEACHER: Lan Lin, Hopkins School, New Haven CT

Prerequisite: Chinese 4 or Honors Level

This intermediate level course, conducted entirely in Chinese, involves the reading of authentic texts of modern Chinese society and culture. Students explore current cultural topics through stories, dialogues, and documentaries using multimedia materials ranging from Internet, television, and films to traditional textbooks. Throughout the year, students write papers, critique films, and participate in oral discussion and debates.

Time Band: This course has a split time schedule – Wednesday 11:05-12:05 pm EST / Friday 12:10-1:10pm

2016-2017 COURSE DESCRIPTIONS

Humanities Offerings

AP ECONOMICS: MACRO & MICRO (full year)

TEACHER: Kelly Aull, Trinity Preparatory Day School, Winter Park FL

Prerequisite: Completion or concurrent enrollment in Precalculus.

The macroeconomic portion of this year long course teaches students the principles of economics that apply to an economic system as a whole. Specific topics include the study of national income and price-level determinants, economic performance measures, the financial sector, stabilization policies, economic growth, and international economics. The microeconomic portion teaches students about the nature and functions of individual decision makers in the modern economic system. Specific topics include the nature of product markets, factor markets, and the role of government in promoting efficiency and equity in the economy. Participation in the Florida Stock Market Challenge as a term project is a possibility. Course completion enables students to sit for the AP Economics exams.

Time Band: Monday / Thursday, 11:05am – 12:05pm EST

THE AMERICAN FOOD SYSTEM: PAST, PRESENT, FUTURE (first semester)

TEACHER: Brent Powell, The Derryfield School, Manchester NH

No Prerequisite

The American Food System consists of the interrelated components of how we get food from “farm to fork,” including the producing, harvesting, processing, transporting, marketing, distributing, and the eating of food. Through a humanities-based, interdisciplinary approach the course will examine the political, social, economic, and environmental aspects of the system, as well as the challenges and opportunities in moving from our current industrial food system to a more sustainable one.

Students will engage in a variety of projects, allowing them to understand their regional and local food systems, while learning from their classmates throughout the country. Topics to be covered include animal agriculture, organic farming, local production and distribution, the debate over GMOs, the marketing of unhealthy food to children, and the problem of hunger in America.

Time Band: Tuesday / Friday, 11:05am-12:05pm EST

CREATIVE NON-FICTION WRITING WORKSHOP: IF ONLY YOU COULD SEE THIS PLACE (second semester)

TEACHER: Susan Conley, Waynflete School, Portland ME

No Prerequisite

How do we write great non-fiction (and this includes all flavors of essays—college essays, literary journalism, memoir, and more), so that our stories have an injection of narrative tension that invites the reader to sit down inside our stories and stay a while? This workshop will help you become a better writer so that your stories contain an electrical charge that starts at the sentence level and travels through the entire piece. This tension, or electrical charge, is the engine that great non-fiction runs on. Students will search the places in one’s life that have mattered most, and using a series of fun writing prompts, generate new writing, using place as a portal to help land on the life stories that students’ most want to tell. Later, the class will move into class workshops of each student’s work. Each session will also look at other specific craft aspects: primarily beginnings, endings, and the weaving of multiple story lines in one essay. Students will also read some fantastic published work.

Time Band: Monday / Thursday 3:35 – 4:35 pm EST

CREATIVE WRITING IN THE DIGITAL AGE (first semester)

TEACHER: Julia Maxey, Severn School, Severna MD

No prerequisite

Storytelling is as important today as it was hundreds of years ago. What has changed, in many cases, is the media through which writers tell their stories. Today’s literary artists take advantage of digital tools to spread their messages and tell their stories in new ways that combine narrative and contemporary form. Students will begin with the traditional forms of poetry, short prose, and literary non-fiction and then go beyond those forms to explore how contemporary tools can enhance expression. We will study master writers in each of the traditional forms and be inspired by their examples. Then, we will look at how communication in the 21st century has provided us with even more ways to share our thoughts and to be creative. Possible explorations include hyperlinked narratives, social media as inspiration and tool, animated text, audio, videos, and all manner of non-linear narrative. The class will ask an essential question: what happens when communication becomes wider and has an instant audience? The class routine, based around writing, reading, and discussion, will include weekly critiques of student work and required writing, including in some non-traditional, contemporary formats

Time Band: Monday / Wednesday 2:30 – 3:30pm EST

2016-2017 COURSE DESCRIPTIONS

Humanities *continued*

DIVERSITY IN A GLOBAL COMPARATIVE PERSPECTIVE (first semester)

TEACHER: John Aden, Canterbury School, Ft. Wayne IN

No prerequisite

Diversity in Global Comparative Perspective examines the ways our Human Family has sought to create, marshal, contest, and maintain identities through Culture and relations of power. These identities can be appreciated through "lenses of analysis." The course critically engages the traditional "Big Three" lenses of analysis: Race, Class, & Gender, understanding that Culture serves as an important backdrop against which these identities emerge. Once students appreciate the important ways the Social Sciences have engaged with, written about, and debated these three core modes of analysis, the course expands to incorporate other, equally rich, lenses: age, ableism, intellectual diversity, geographic diversity, cognitive and neurological diversity, and the business case for Diversity, as well as how to study synergistically intertwined phenomena. Film and Critical Film Studies, as well as the role Colonialism has played in the major conflicts of the last 500 years, each serve to enrich student understandings of Diversity.

Time Band: Wednesday / Friday 4:40 – 5:40 pm EST

ENVIRONMENTAL BIOETHICS (second semester)

TEACHER: Ellen Johnson, Wilmington Friends School, Wilmington DE

No Prerequisite

This course will focus on such cases as environmental sustainability, global energy and food resources, gathered from sources in literature, journalism, and film. The academic study of ethics examines how people make the decisions. Curricula will build on a foundation of theoretical moral theories, more specifically, how one makes decisions when faced with complex, often controversial, issues. No prior knowledge of philosophy is assumed, however, authentic assessment of students' initial facility with logical analysis will ensure that all students are challenged to grow and deepen their theoretical and practical understandings of the subject.

Time Band: Tuesday / Friday, 3:35 – 4:35pm EST

ETYMOLOGY OF SCIENTIFIC TERMS (first semester)

TEACHER: David Seward, Winchester Thurston School, Pittsburgh PA

No Prerequisite

The purpose of the course is, to quote the textbook, "By teaching ... the root elements of medical terminology – the prefixes, suffixes, and combining forms of Greek and Latin ... not only to teach students modern medical terminology, but to give them the ability to decipher the evolving language of medicine throughout their careers."

This is in many ways a language course, and deals with the elements that are used to create terms to meet the specific needs of medical scientists. As material is introduced, students will complete practice exercises during each class meeting, as well as complete approximately one quiz per week. Outside of class, students are expected to analyze and define fifty terms each week. Additional material deals with especially complex etymologies, the history of our understanding of certain aspects of medical science, and relevant material from Greek and Latin texts.

Time Band: Tuesday / Friday 2:30 – 3:30pm EST

MAN'S INHUMANITY TO MAN: GENOCIDE AND HUMAN RIGHTS IN THE 20TH CENTURY (second semester)

TEACHER: George Dalbo, Mounds Park Academy, St. Paul MN

No Prerequisite

The story of genocide in the 20th century stands in stark contrast to the social progress and technological advancements made over the last 100 years. As brutal culmination of nationalist and racist attitudes and policies, as well as a poignant reminder of both the cruelty and resilience of human beings, these genocides punctuate modern history with harsh reality. This course will explore the many facets of genocide through the lenses of history, literature, art, sociology, and law. Specifically, we will turn our attention to understanding the framing of genocide as a legal concept. Using the holocaust as our foundation, we will examine examples of additional genocides from the 20th century, including those in Armenia, Cambodia, Rwanda, and Bosnia (among others). Ultimately, we will train our attention to the enduring legacy of genocides around the world, especially as we consider attempts to recognize, reconcile, and memorialize genocide from the individual to the collective. Students will read and analyze primary source material, secondary historical accounts, genocide testimony and memoirs, in addition to examining individual fictional and artistic responses and the collective memories and memorials of whole societies.

Time Band: Wednesday / Friday 4:40 – 5:40 pm EST

2016-2017 COURSE DESCRIPTIONS

Humanities *continued*

MEDICAL BIOETHICS (first semester)

TEACHER: Ellen Johnson, Wilmington Friends School, Wilmington DE

No Prerequisite

This course will focus on such cases as medical practice, medical research and development, and health care policy, examined through a wide array of case studies, gathered from sources in literature, journalism, and film. The academic study of ethics examines how we make the decisions. Curricula will build on a foundation of theoretical moral theories, more specifically, how we make decisions when faced with complex, often controversial, issues. No prior knowledge of philosophy is assumed, however, authentic assessment of students' initial facility with logical analysis will ensure that all students are challenged to grow and deepen their theoretical and practical understandings of the subject.

Time Band: Tuesday / Friday, 3:35 – 4:35pm EST

MUSIC HISTORY: HISTORY OF ROCK AND ROLL (second semester)

TEACHER: Chuck Kraus, Fort Worth Country Day School, Fort Worth TX

No prerequisite, but students should have basic knowledge and understanding of music fundamentals.

This course presents the historical evolution of contemporary American music. The course will primarily cover American pop/rock music through the lens of treating American pop music as a worldwide musical first. The course is the first of its kind, covering the pop/rock genre in a deep, consistent, and accessible way. The course includes detailed listening guides helping students understand compositional technique, musical timing, and lyric construction. Of particular significance is the inclusion of Interactive Listening Guides providing moment-by-moment descriptions of the music as it is performed.

Time Band: Tuesday / Friday 11:05 – 12:05 pm EST

PHILOSOPHY IN POP CULTURE (first semester)

TEACHER: Joyce Lazier, Canterbury School, Fort Wayne IN

No prerequisite, but some familiarity/experience with logic will be helpful.

Have you ever had a realistic dream that you were sure was true and then work up confused? How do you know that you are not in the Matrix? What is real and what is not? This course will investigate the nature of existence. It will combine classic philosophic works, like Descartes, with contemporary movies like *The Matrix* and *Inception*, to contemplate what it is to exist and what the meaning of life is or should be.

Time Band: Wednesday / Friday, 1:15-2:15pm EST

SURVEY OF ART HISTORY THROUGH SCULPTURE (first semester)

TEACHER: Lauren Cunningham, Fort Worth Country Day School, Ft. Worth TX

No prerequisite, but students who have taken studio art, or Art History will be especially suited for this class.

A culture's artworks reflect its hopes, fears, and dreams and provide a snapshot into the human experience. This semester-long course will introduce students to the great artistic traditions, from its prehistoric beginnings to the present day, through a lens of sculptures depicting the human body. Students will gain the vocabulary to talk about these works of art and understand them within their social and cultural contexts. Students will also make thematic connection between artworks, examining topics such as consumerism and body image, and gain a deeper understanding of sculptural icons such as Michelangelo's David, Rodin's Thinker, and the Statue of Liberty. The aim of the course is for students to not only better understand the visual environment we live in but also to see how it reflects our own history, values, and ideals. Students will be prepared for further study in art history at the college level.

Time Band: Tuesday / Friday 11:05 – 12:05 pm EST

2016-2017 COURSE DESCRIPTIONS

STEM Offerings

ADVANCED ABSTRACT MATH (first semester)

TEACHER: Justin Fitzpatrick, University School of Nashville, Nashville TN

Prerequisite: Algebra II

This student-driven course is for those interested in learning topics outside the standard mathematics curriculum, as well as learning topics already within the curriculum at a deeper level. At the beginning of the course, there will be a brief unit on proof techniques. These techniques will then be used by the students to prove results in diverse areas such as Cantor's theory of infinite sets, fractal geometry and dimension, number theory, basic algebraic structures, cryptography, and topology of surfaces, to name a few. The course is taught using a variant of the [Moore Method](#), so very little content is delivered by lecture, and the students generate the content of the course by the proofs done in homework exercises and in classroom discussions. Students share their proofs with their classmates, and these proofs will be evaluated first by classmates and then by the instructor. An emphasis is placed on accuracy both in writing and in spoken communication, as both of these skills are of paramount importance to the budding scientist or mathematician.

Time Band: Tuesday / Thursday 12:10 – 1:10 pm EST

ADVANCED TOPICS IN CHEMISTRY (second semester)

TEACHER: David Walker, Maret School, Washington DC

Prerequisite: Chemistry

This semester course explores real-world applications to chemistry that are often skimmed over or omitted in most chemistry courses. Possible topics include nuclear, medical, atmospheric, industrial, food, water, and consumer product chemistry. Learn how a nuclear power plant works, how fuels are chemically altered for vehicles, what chemicals are added to drinking water and why they are added, how ores are processed into useful products, and why a country's standard of living can be determined by its production of chlorine or other important chemicals. Students will explore the periodic table for daily applications and technologies, from cell phones to photovoltaic cells to medical treatments. This course will be heavy in applications and theory, leaving out much of the problem-solving found in other courses.

Time Band: Monday / Thursday, 2:30 – 3:30pm EST

ADVANCED MATH TOPICS: ADVANCED APPLIED MATH THROUGH FINANCE (second semester)

TEACHER: Julien H. Meyer III, Severn School, Severna MD

Prerequisite: Algebra II

This one-semester course will provide students a mathematical and conceptual framework with which to make important personal financial decisions using algebraic tools. Specifically, the class will investigate i) the time value of money (i.e., interest rates, compounding, saving and borrowing) using exponential functions; and ii) the characteristics and risk/reward tradeoff of different financial instruments/investments, such as stocks, bonds and mutual funds, using algebra, probability and statistics. Other financial algebra topics selected with student input may include financial accounting, depreciation methods and foreign currency exchange. The course will stress use of the TI-83/84 calculator, Excel spreadsheets and iPad apps. Students should be comfortable with exponential growth models and, preferably, the concept of the number e for continuous compounding. They should be willing to exhibit an interest in mathematical reasoning and display a hefty dose of curiosity about the language and problem solving nature of personal finance.

Time Band: Monday / Wednesday, 2:30 – 3:30 pm EST

APP DESIGN AND DEVELOPMENT (second semester)

TEACHER: Martha Cunningham, Maret School, Washington DC

Prerequisite: Algebra I and an Introductory Computer Science course. Course targets students in grades 9 and 10.

In this course students will learn the app development process from the idea stage through prototyping and testing to final product delivery. The course emphasizes creating flexible data structures, code management, usability, and efficient coding skills. Apps will be developed for Android and iOS devices. Coursework will include individual and group projects

Time Band: Tuesday / Friday 2:30 – 3:30 pm EST

2016-2017 COURSE DESCRIPTIONS

STEM

continued

ASTRONOMY (first semester)

TEACHER: Kalee Tock, Stanford Online High School, Stanford CA

Prerequisite: Algebra I. Course targets students in grades 9 and 10.

This semester-long course introduces students to historical and modern astronomy. Topics include the nature of light, the atom, telescopes, and orbits. In addition, students will learn about the life cycles of stars, including an introduction to black holes. Through various activities and experiments, students will explore our place in the universe as well as the relative scales of astronomical objects. As a class, students will leverage our disparate locations to reconstruct historical calculations such as the circumference of the earth by Eratosthenes and the distance to the sun by Aristarchus. Engaging with current research, the course will examine the modern astronomical data used to search for and categorize the thousands of planets outside our solar system.

Time Band: Monday / Wednesday 3:35-4:35 pm EST

COMPUTER SCIENCE: INTERACTIVE DIGITAL IDEAS THROUGH CREATIVE GAME DESIGN (first semester)

TEACHER: Doug Bergman, Porter-Gaud School, Charleston SC

Prerequisite: Text-based programming course.

This is the first of a two-course class sequence where students will learn advanced computational and problem solving skills as they learn to turn their own creative ideas into something real on their screens. Students choose a topic that is important and interesting to them, and we'll spend the semester creating a 2-D interactive, fun, and engaging digital experience around that topic. Students can expect to write from several hundred to a couple thousand lines of code in the C# (C-Sharp) language. In addition to learning about interactive game industry itself, we'll also look at the business of, and strategies behind, creating a successful game. Students will need a desktop or laptop running Windows 7, 8, or 10. (Virtual Machines will not work. Bootcamp is acceptable.) In addition, students will use the Microsoft Visual Studio IDE.

Time Band: Tuesday / Friday 3:35 4:35pm EST

COMPUTER SCIENCE: INTERACTIVE HUMAN MOVEMENT THROUGH PHYSICAL ACTION (second semester)

TEACHER: Doug Bergman, Porter-Gaud School, Charleston SC

Prerequisite: Intermediate programming skills and C# (C-Sharp)/ Visual Studio experience required.

This is the second of a 2-course class sequence that uses physical motion and 3D position as the "input device." instead of a keyboard or mouse. Students can expect to write from several hundred to several thousand lines of code in the C# (C-Sharp) language. Students choose a topic that is important and interesting to them, but that also has physical movement as a major component. (For example: injury rehabilitation, Yoga training, or sport form analysis.)

Students will spend the semester learning to take raw data in real time from the Kinect camera and interpret into their programs. We'll also investigate the place for alternative input devices in society and explore the entrepreneurship/business side of Computer Science by analyzing actual competing products, studying demographics and target audience, designing effective marketing and promotion campaigns, and developing salesmanship. Students will need a desktop or laptop running Windows 7, 8, or 10. (Virtual Machines will not work. Bootcamp is acceptable). Students will use the Microsoft Visual Studio IDE. C# and Visual Studio are both used in industry.

Time Band: Tuesday / Friday 3:35 4:35pm EST

CSI: MSON – FORENSIC SCIENCE (second semester)

TEACHER: Carrie Lopez, Trinity Preparatory Day School, Winter Park FL

Prerequisite: Completion or concurrent enrollment in Chemistry or Biology and Algebra II

This course is designed for those interested in learning the discipline of forensic science and crime scene investigation. Students will be introduced to some of the specialized fields of forensic science and topics will include blood spatter and pattern analysis, death, ballistics, trace and glass evidence, toxicology, entomology, anthropology, serology, and DNA fingerprinting. Students will explore the forensic analysis of substances such as glass, soil, hair, bullets, gun powder, blood and drugs. This class will include a mixture of laboratory experiments, demonstrations, and speakers who are experts in the field.

Time Band: Tuesday / Thursday, 1:15-2:15pm EST

2016-2017 COURSE DESCRIPTIONS

STEM *Continued*

GENETICS AND GENOMICS: DIVING INTO THE GENE POOL (first semester)

TEACHER: Paula Phillips, Trinity Preparatory School, Winter Park FL

Prerequisite: Chemistry and Biology

This course will emphasize classic Mendelian genetics, molecular genetics, and population and evolutionary genetics. The topics include structure and function of genes (and the genome), biological variation, and gene regulations. Subsequently, the course will explore what experimental research has taught us about genome analysis methods, and our use of this information in society. Topics include recombinant DNA technology, mathematical models and statistical methods for data analysis. Papers from the current and classic literature will supplement lecture material.

Time Band: Tuesday / Thursday, 1:15-2:15pm EST

INTRODUCTION TO COMPUTER PROGRAMMING (first semester)

TEACHER: Katie O'Shaughnessey, Hopkins School, New Haven CT

Prerequisite: Algebra 2. Open to freshman students and above.

This course is designed to serve as a first course in computer science for students with no prior computing experience. The course concentrates on programming in Processing, which prepares students to work with other object-oriented programming languages. Themes include data structures, logic, problem solving through algorithm design, computer graphics, and user interaction. Topics in object-oriented programming include objects, classes, inheritance, polymorphism, and code reusability.

Time Band: Tuesday / Friday, 2:30 – 3:30pm EST

INTRODUCTION TO ORGANIC CHEMISTRY (first semester)

TEACHER: David Walker, Maret School, Washington DC

Prerequisite: Chemistry

This semester course will provide useful background information in organic chemistry by covering topics not typically found in high school chemistry courses. The course will give insight into the importance of the chemistry of carbon compounds to our daily lives. Topics covered will include organic nomenclature, structural formulas, stereochemistry, bonding, reaction mechanisms, chemical transformations of functional groups, and instrumental isolation and detection techniques. Applications to the life sciences (chemistry of proteins, nucleic acids, medicines, and natural products), biochemical applications to medicine, industrial applications, and environmental applications will be explored. Completion of the course should make students more confident in their chemical background when entering college biology or chemistry courses.

Time Band: Monday / Thursday, 2:30 – 3:30pm EST

MODERN PHYSICS (second semester)

TEACHER: Benjamin Taylor, Hopkins School, New Haven CT

Prerequisites: Physics or AP Physics 1; Co-requisite: AP Calculus AB

This is a mathematically rigorous course in which students study contemporary physics. The course begins with Einstein's theory of relativity, and then takes on a chronological exploration of the development of quantum mechanics. Time travel, quantum tunneling, and the acceptance of seemingly impossible dualities mark highlights of this course.

Time Band: Monday / Thursday, 10:20 – 11:20am EST

MULTIVARIABLE CALCULUS (full year)

Section 1: TEACHER: Joshua Link, Maret School, Washington DC

Section 2: TEACHER: Ben Sabree, St. Andrews Episcopal School, Ridgeland, MS

Prerequisite: BC Calculus

The mathematics of three dimensions is the emphasis of this college-level course. Multivariable Calculus will explore the geometry of three-dimensional space, including vector arithmetic. It will also explore three-dimensional surfaces, using the tools of derivatives and integrals expanded into multiple dimensions. A robust unit on differential equations will allow students to review the topics of single-variable calculus. The emphasis throughout the course will be on problem-solving and on real-world applications of the tools students learn in fields such as economics, astronomy, physics, engineering, and medicine.

Time Band:

Section 1: Monday / Wednesday, 12:10 - 1:10 pm EST

Section 2: Tuesday / Thursday, 4:40 – 5:40 pm EST

2016-2017 COURSE DESCRIPTIONS