

2014 WINTER SEMINAR

The list below contains Winter Seminar topics and instructors. Descriptions follow on the next pages. Seminars offer you an opportunity to intensively study a new and unique area of interest outside of your classes' curriculum.

Please come to Ms. Whitesell on the appointed day with 2 (TWO) choices (in case your first choice is full). Seniors will begin sign up on-line Tuesday 12/9 beginning at 11:30 a.m. Juniors will begin sign up on Wednesday 12/10 at 10:00 a.m. **Seniors may not repeat the same seminar they attended the previous year.**

Seminars will incorporate a focus on 21st century learning and innovation skills as defined by Partnership for 21st Century Skills. C & I = Creativity & Innovation; CTPS = Critical Thinking & Problem Solving; and C&C = Communication & Collaboration.

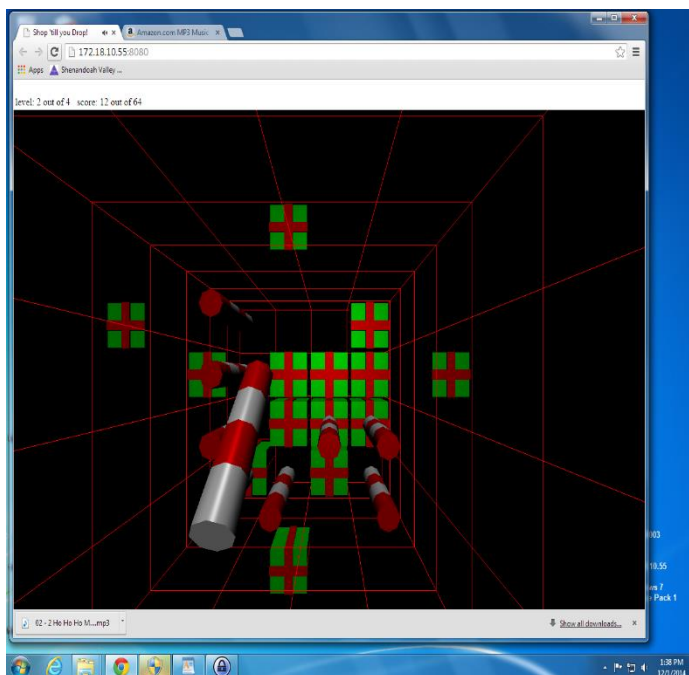
Seminar	Teacher	Restrictions
1. China: Understanding Cultural Diversity(C&C)	Zhu	
2. 3D Interactive Graphics Seminar(CTPS, C&I)	Irons	
3. Epidemiology (CTPS)	Hamilton	<i>Not open to current Molecular Biology students</i>
4. Electricity and Electronics of Christmas Lights (CTPS, C&I)	Daw	
5. Film Studies (C&C)	Jeffrey	
6. Local Geology (CTPS)	Nelson	
7. Physics Video Contest(CTPS, C&C)	Martin	
8. A Taste of Python(CTPS, C&C)	Klein	
9. Romania: Understanding Cultural Diversity(C & C)	Sava	
10. USA Mathematical Olympiad (CTPS)	Jenny	
11. Theater Productions(C & I)	Maxton-Whitacre (38)	<i>Restricted to all theatre students and other members of production</i>
12. Senior Art Portfolio Development(C & I)	Vaughan (5)	<i>Restricted to senior art students</i>

China: Understanding Cultural Diversity

With Dr. Zhu

Enrollment limited to 16

China has a continuous history of more than 5,000 years. Mysteries and distinctiveness are fascinating in many facets of Chinese culture. The root of Chinese culture lies in its unique language which is currently used by one in every five people in the world. Chinese calligraphy, a unique visual art, is considered the quintessence of Chinese culture that encompasses its language, history, philosophy and aesthetics. This seminar introduces Chinese culture and Chinese calligraphy to any students who are interested in oriental culture. Students will learn the most basic Chinese language - speaking and writing, discuss any topics about China, and have opportunities to create your own work of Chinese calligraphy. Grading will be based on completion of your work, mastery of the basic skills and creativity in style as showed in your art-work.



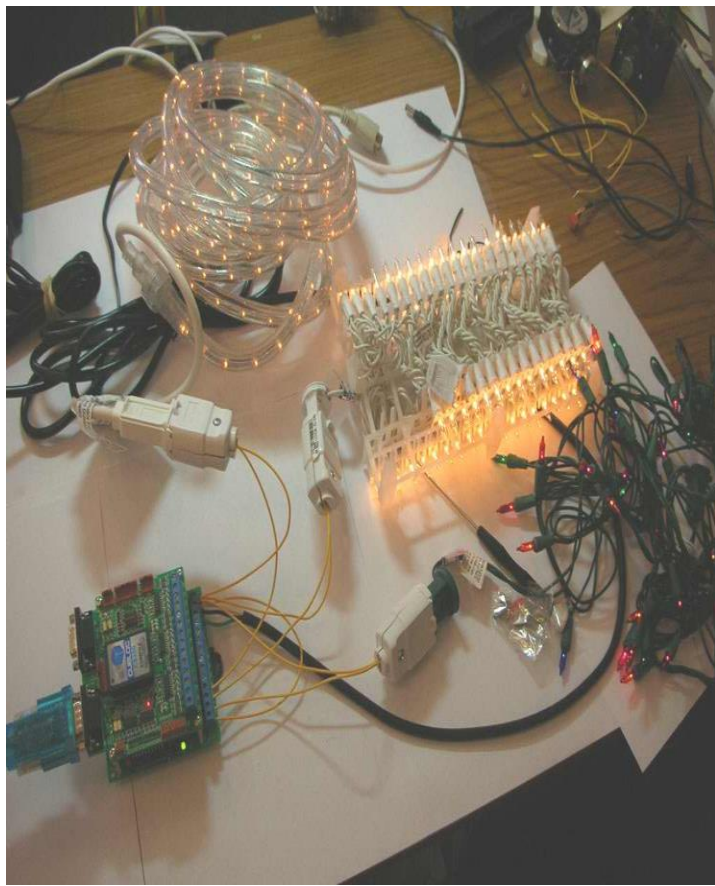
3D Interactive Graphics Seminar

With Mr. Irons

Enrollment limited to 20

This seminar will be a short introduction to 3D interactive graphics for web browsers using the javascript library *Three.js*. We will start by creating simple geometric shapes (boxes, cylinders, doughnuts) and materials to cover them, using pre-defined objects from *Three.js*. We will add animation, then keyboard control, scoring, and sound. Along the way, we will learn how to define and use functions, recursive functions, arrays, and looping in javascript. Our goal is to create a simple 3D holiday browser game which you can sample at

<http://mathmage.org/shopTillYouDrop/>.



Electricity and Electronics Applications in Christmas Lighting

With Mr. Daw

Enrollment maximum - 16

The purpose of this project is to learn about electronic components, assembly, control and troubleshooting.

Students will learn to identify and understand the function of electronic components such as resistors, capacitors and motors. Students will also build and trouble-shoot electric circuits. Teams of 2-3 students will design, assemble and trouble-shoot a Christmas lighting display as part of the SVGS Christmas decoration process. The displays will include an array of lights, and perhaps additional features, such as spinning wheels, that operate in a complex and interesting manner. The displays will be ready to show before the end of seminar. Students will be evaluated on participation, performance on skills tests and effectiveness of the lighting display.

Epidemiology - Outbreak!

With Mrs. Hamilton

Enrollment limited to 14

NOTE: Not open to current Molecular Biology students.

Do epidemics of deadly infectious diseases fascinate you? If so, you might be a budding epidemiologist! This seminar explores the history and science of epidemiology. Learn how we use both cutting edge biotechnology and old-school techniques to address a problem that has confronted humans from their origins.



Film Studies

With Mr. Jeffrey
Enrollment limited to 16

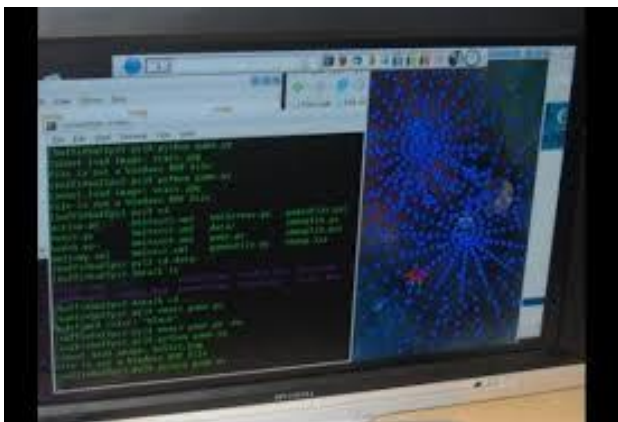
Just as authors carefully consider literary conventions (character, setting, mood, conflict, theme), so, too, do film directors consider cinematography choices. In this seminar, students will become comfortable identifying basic components of film analysis and will apply these elements to legendary horror film sequences as a way of understanding directorial decisions. In addition, students will examine and consider the role of social media on cinematic critical reception. Students' culminating activity will be a film analysis presentation accompanied by a written analysis and observations from online movie communities (Flixter, Rotten Tomatoes, Twitter, etc.).



Local Geology

With Mrs. Nelson
Enrollment maximum - 16

This seminar will study the local geology of the Shenandoah Valley. The curriculum will mirror one developed by Shenandoah National Park to study how our mountains formed and how geologists determine the geologic history of an area by studying the rocks that are present now. We will also look at plant life as it relates to the type of geology in the area, including rock types, topography, and soil formation. Students will need to buy a composition book for this seminar which they will turn in for their culminating grade at the end of the class.



A Taste of Python

With Mr. Klein

Enrollment maximum - 16

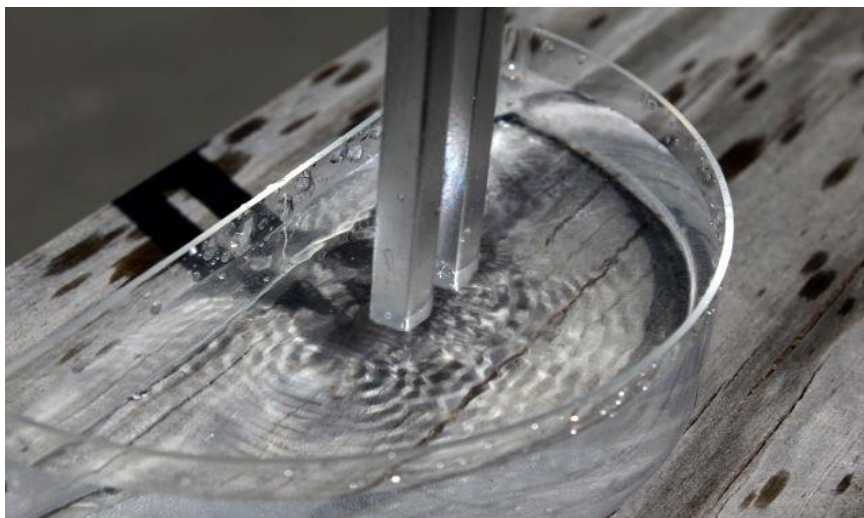
Learn programming skills through Python, an object oriented programming language. For visual learners, we will use the turtle graphics associated with Python. We will learn about how the syntax of the python language works.

Physics Video Contest

With Mr. Martin

Enrollment maximum 16

Each year, James Madison University hosts a physics video contest for K-12 students in private and public schools across the country. Students may work in groups of 1 – 5 individuals to create a video of no more than three minutes in length that explains a physical phenomenon. Monetary prizes are awarded directly to members of winning video teams, in addition to funds for the host classroom's educational supplies.



In this seminar, you will learn to create and edit videos using Final Cut Express, choose a physics-related topic of interest, design a storyboard, and begin filming for your contest entry. Please note that additional work on the project may be required beyond the end of seminar. Contest entries are generally due in early April.

Additional information can be found at <http://csma31.csm.jmu.edu/physics/Public/videocontest.html>

Romania: Understanding Cultural Diversity

With Mrs. Sava

Enrollment limited to 16

Learning with/from other cultures it is a constant reminder that we are all here, celebrating not the differences that we have from each other, but rather, to celebrate at it's highest peak the value of our diversity. This 3-week seminar introduces This seminar is a free ticket to virtual visit Romania, and also a challenge: Students will learn the most basic Romanian language - speaking and writing, discuss any topics about Romania and have opportunities to create a unique, traditional Merry Cemetery cross, craft popular costumes accessories and taste some of Romanian homemade food. Grading will be based on completion of your work, mastery of the basic skills and creativity in style as showed in your art-work.



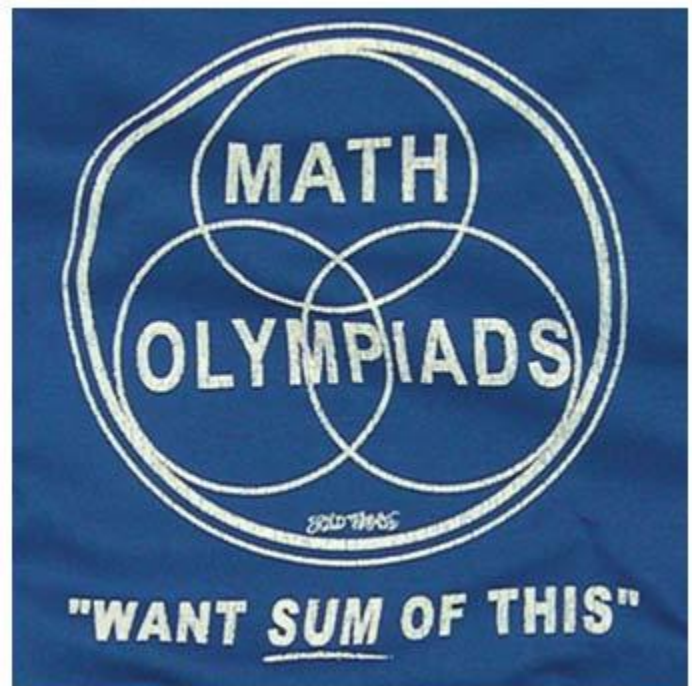
US Math Olympiads

With Mrs. Jenny

Enrollment limited to 20



Do you relish the opportunity to solve interesting math puzzles? Do you love the satisfaction that comes with untangling a thorny problem? In this seminar, you'll have the opportunity to stretch your mathematical muscles in a "recreational math" experience. All of the math concepts you'll need come from algebra, geometry, and trig. No need for calculus! Grading in the seminar will be based on participation and risk-taking – not the usual "get the right answer" rubric! Those who are interested may continue beyond the seminar to prepare for the AMC 12 competition in February, a qualifier for the USA Mathematical Olympiad.

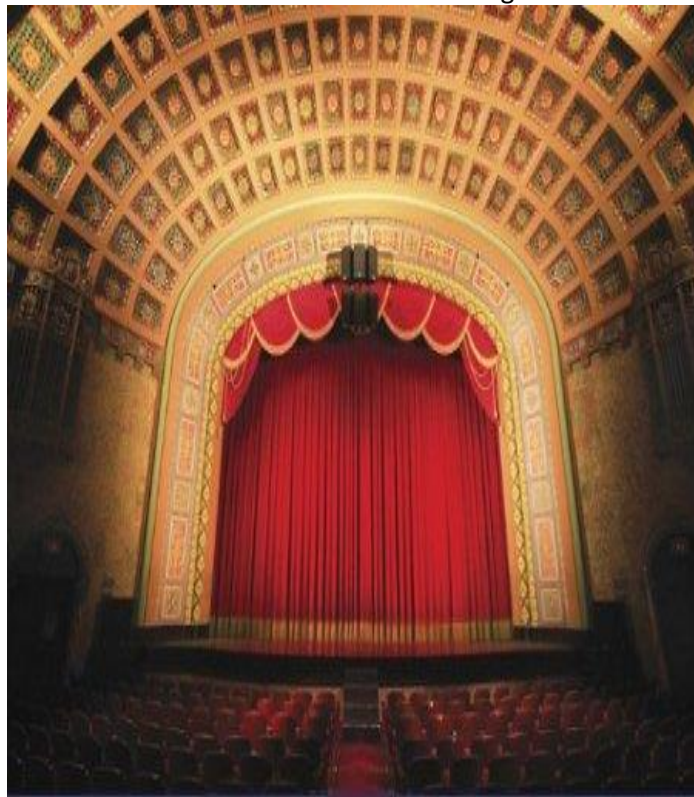


Theater Production

With Ms. Maxton-Whitacre

Enrollment limited to students cast in roles or recruited for production work

This seminar will give students hands-on experience in creating a full-length musical theatre production. At daily rehearsals actors will apply concepts from their Studio Acting and Craft & Skills classes to the creation of characters for formal performances before an audience. This course will focus on line memorization, ensemble building, character analysis, dance, singing, and the working environment of professional theatre. Students will also work behind the scenes in the areas of stage management, marketing & public relations, hair & makeup design, choreography, set construction, costuming, lighting, and many other related areas involved with staging a major show. This year's show will be *Pippin*, directed by Cassy Maxton-Whitacre, with music direction by guest artist Mark Thress and choreography by guest artist Lindsey Walters.



Senior Art Portfolio Development

With Ms. Vaughan

Enrollment limited to senior art students

The Studio Art seminar is designed to give AP Studio Art students the opportunity to focus on projects for their concentration area of the portfolio requirement. The concentration area is a student-selected area of focus. The seminar includes large blocks of time for project work, class critiques, conferences with the instructor, and photo shoots. Students will learn techniques in photographing their work for proper presentation. The goal is that by the end of the seminar period the concentration area of the portfolio is at least 75% complete with a cohesive, well thought out, and high quality body of work. This is required of all Art seniors unless special permission received from the instructor.