



Digital Earth Choose an item.
COURSE INFORMATION SHEET

Instructor: Click here to enter text.
High School Class Title: Click here to enter text.
Partnering High School: Choose an item.
Email address: Click here to enter text.
School Phone Number: Click here to enter text.
School Year: Choose an item.
Course occurrence: Choose an item.
High School Credit: Choose an item.
MCC Credit: Choose an item.

This is a concurrent enrollment course offered to high school students. The course is taught during the school day by a high school teacher whose academic background has been reviewed and approved to teach the MCC curriculum. The course is supervised by an MCC faculty member.

COURSE DESCRIPTION

Introductory geospatial skills will be covered, including geography, as well as hands on use of Geographical Information Systems (GIS), GPS, and remote sensing. Topics such as sustainability, renewable energy, and the economy will be integrated into the course through the use of GIS. One project will provide students the opportunity to use geospatial technology and real data to create original maps that begin to provide a solution to a real world problem. Prior computer knowledge such as creating, saving, deleting, and locating files on a PC, as well as preparing and printing Microsoft Word documents, using Microsoft Excel spreadsheets, creating Microsoft PowerPoint slides, using e-mail and the Internet will be required to be successful in this course. This is a SUNY General Education Natural Science lab course, as well as a sustainability elective (GR).

REQUIRED COURSE MATERIALS

- 1) 16 Gb **flash (thumb) drive**
- 2) Internet access (not dial-up)

COURSE LEARNING OUTCOMES

1. Explain the Geographic perspective and discuss why geography is fundamental to understanding sustainability and our environment
2. Students will engage in the scientific process by completing their GIS inquiry based project.
3. Assess and apply scientific data.
4. Demonstrate an understanding of how environmental, climate, economic and/or energy

problems can be analyzed by GIS.

5. Explain the geography of solar energy and wind across the United States.
6. List and describe non renewable and renewable energy sources across the United States from a geographic perspective.
7. Explain why certain energy sources are most suitable for certain areas of the United States.
8. Utilize remote sensing to explore the local region.
9. Collect data in the field to explore the natural landscape.

ATTENDANCE AND WITHDRAWAL POLICY

Prompt and regular attendance at all class and laboratory sessions is expected. Excessive absence may be reported and will adversely affect the student's academic achievement in a particular course.

WITHDRAWAL FROM A COURSE

If the student and teacher agree that withdrawing from the course is in the student's best interest, the teacher will contact the MCC faculty liaison. In order to receive a grade of W, a student must officially withdraw from the MCC course. It is important to note the withdrawal deadlines. Failure to properly withdraw from a course will result in the student receiving the grade he/she earned in the course. Students who no longer attend class, quit school, or move out of the school district must also be withdrawn from their MCC course. There is no tuition refund for a course withdrawal.

MAKE-UP POLICY

Students that miss Exam 1 or 2 due to an excused absence will complete the exam when he or she returns to class. Students that miss Exam 3 due to an excused absence may complete the exam at my discretion and convenience. All exercises and labs are due within approximately a week (unless noted otherwise), although your lowest 10 points will be dropped. Late activities, lab exercises and rough drafts of projects will be given $\frac{1}{2}$ credit if turned in 1 week after their due date. Ten points per day will be taken off for late projects.

ACADEMIC HONESTY

In the academic process, it is generally assumed that intellectual honesty and integrity are basic responsibilities of the student. Violations of these responsibilities consist mainly of cheating and plagiarism. Cheating is defined as the unauthorized use or exchange of information by students or others for the purpose of achieving unfair advantage in the classroom or assessment process. Plagiarism is using someone else's work as if it were one's own, whether or not it is done intentionally. This includes, but is not limited to: using the exact language, using nearly the exact language and using ideas without showing they originated in another's work. The work taken from another person or source (including publications, web sites, speeches, etc.) may be as little as an isolated formula, portions of a speech, a simple sentence, an idea, or as much as entire paragraphs, papers, or writings of professionals or other students.

The Monroe Community College Catalog and Student Handbook (available online) describes the college's expectations regarding academic honesty in more detail, and outlines the procedures for handling violations of this policy as well as disciplinary action which may be executed.

COURSE REQUIREMENTS

Important! This course is extremely computer-intensive and you should be prepared to spend considerable amount of time working on various assignments. **Plan your time accordingly right from the start; it is crucial for your success in this class!** Some labs may take much longer than others. All attempts will be made to make sure that sufficient time is given. **It is your own responsibility to keep the data secured and saved in at least 2 locations.** Backup often (and I mean really often). Check for viruses when moving between computers. Keep your data files organized. You can use the Electronic Learning Center (ArcGIS) to work on your lab exercises and your project(s). Note, there are a limited number of ArcGIS licenses on campus. You can use your free 60 day trial version of ArcGIS at home.

Labs: In-class lab exercises are given weekly. They may be individual exercises or small group work. There will be approximately 10 to 12 exercises and each will be worth 10 points. We will be using a mix of GIS tools (Web GIS, Pictometry and ArcGIS 9.3). Students may be asked to self or peer-evaluate lab exercise(s). The instructor will either agree, or disagree with the evaluation, and then provide a final grade. These exercises are due within one week that they are assigned unless noted otherwise and will likely require some time outside of class to complete. If you need help, please let me know. Most labs will need to be turned in electronically (by email, Angel, Share drive, TBA). The lowest 10 points will be dropped.

Active Learning Exercises: Short individual and/or small group exercises will be collected occasionally before lab assignments. These will be collected at the discretion of the instructor. If they are collected they will be worth 5 points. The lowest will be dropped. Approximately ten will be collected through the course of a semester.

Team Leader: Each student will be a team leader twice during the semester. This is worth 10 points for a total of 20 points. Each team consists of three to four people. The objective **is** to create an atmosphere of peer education (not copying). In other words, students should teach others and supporting fellow classmates through guidance.

Project(s): Student will use geospatial tools (ArcGIS and/or Pictometry) to create four original maps that begin to provide a solution to a real world environmental problem. The project topics will be determined by the student from a list of topic options (e.g., climate, energy, agriculture, sustainable practices). Other topics may be approved at the discretion of the instructor. For example, a student may choose to create a map that will represent the various energy source option(s) in one region of the United States. Students will create a PowerPoint poster, video (collaborate with video department), mural (collaborate with art department) or develop a Web page (Second Life or web page) to display and share their findings. Student projects may be highlighted at MCC functions (e.g.,

Sustainability Day, GIS Day, Scholars Day, and/or Earth Day). Some projects may continue each semester as new students take the course and begin where the last student left off. A sample project might evaluate the various energy source option(s) in a region of the United States, and present an energy plan for the future in one region. Student projects will be assessed based on a rubric. Students may also critique student project(s). An overview of the project will be discussed the first week of class. A rough draft of the project will be due approximately 3 weeks before the last week of class. The project will be due the last week of class. Make sure to save all of your work in two places!

Classroom Environment

The classroom should provide an environment which is conducive to learning and a free exchange of ideas. To achieve this goal it is necessary that we all follow some simple principles: *Be punctual, patient, courteous, honest, and seated during class.* Students are expected to use laptops only for classroom purposes. Students that display disruptive behaviors (keep volume down) may be withdrawn from the course or receive a 3 point reduction per incident. Please **turn off your cell phones** and please no text-messaging. **Thank you** in advance for your cooperation!

***Tentative Course Schedule:**

Topic 1: What is Geography

Lab Exercise 1: Personalized Google My Maps

Topic 2: What is GIS

Lab Exercise 2: Introduction to ArcGIS

Topic 3: Field Work and Geospatial Integration

Lab Exercise 3: Field Lab: Data Collection, GPS, Remote Sensing and GIS Integration

Topic 4: Geography and GIS Essentials

Lab Exercise 4 - GIS Essentials

Study Guide Lab for Exam 1

Exam 1: Topic 1-4

Topic 5: Cartography and Accessing External Data

Lab Exercise 5: Lying Maps

Topic 6: Sustainability and Energy

Lab Exercise 6: Oil Consumption and Production (1968 vs. 2008)

Topic 7: Alternative Energy

Lab Exercise 7: Wind and/or solar Energy

Project Problem Statement

Topic 8: Sustainability/Climate/Economic Topics

Lab Exercise 8: Choose your lab
Exploring Project Data

Topic 9: Census
Lab Exercise 9: Using Pictometry Locally
Brief Project time

Study Guide Lab for Exam 2
Exam 2 on Topics 4-9

Topic 10: Climate
Lab Exercise 10: Analyzing Data
Project Rough Draft due

Topic 11: Pictometry
Lab Exercise 9: Using Pictometry Locally
Brief Project time

Topic 12: TBA or Project Time
Lab Exercise 11: TBA or Project Time

Topic 13: TBA or Project Time
Lab Exercise 12: TBA or Project Time

Project is due one class before the last day of class.

***This schedule is an approximation and will be adjusted if necessary. There will be anywhere from 10-12 lab exercises. This will be determined by the instructor. Specifics of individual topics may vary, although the concepts will remain the same.**

ASSESSMENTS

Map Quiz: One or two location quizzes worth ten points each will be given based on key global and national locations.

Exams will consist of true/false, multiple choice, simple sketches, and short response questions. Study guides will be provided before each exam. Some questions that you have turned in during class time may be on the test. Some exam questions will be knowledge based (facts) while others may ask you to apply concepts, make connections, synthesis concepts, use GIS, and/or make judgments based on evidence.

GRADING

Grading Scale (based upon 450 points)*:

418.5 — 450 points = A

405 — 418 points = A-
391.5 — 404.5 points = B+
373.5 — 391 points = B
360 — 373 points = B-
346.5 — 359 points = C+
328.5 — 346 points = C
315 — 328 points = C-
301.5 — 314.5 points = D+
283.5 — 301 points = D
270 — 283 points = D-
0 — 269 points = F

For questions regarding this course, we ask that students and/or parents communicate with the high school teacher. The high school teacher will communicate with their supervising liaison at the college. This communication protocol is consistent with the Family Educational Rights and Privacy Act (FERPA) (as the Act relates to high school concurrent enrollment students.)