

MATH 110
MATHEMATICAL EXPLORATIONS
SECTION 1

SYLLABUS
FALL 2009

Time: MWF 8:15 - 9:05 AM

Place: Wilson 418

Instructor: Professor Hotchkiss

Office: Wilson 411L

Office Phone: 572-5575

E-mail: photchkiss@wsc.ma.edu

Office Hours:

Monday	2:45 - 4:15 pm
Wednesday	2:45 - 4:15 pm
Friday	10:15 - 11:15 am

and by appointment

Class Materials: A blue notebook.

THE COURSE: Mathematics is generally thought of as a computational field. In fact, computation is only one (small) part of mathematics. In this course we will explore several different mathematical topics. Patterns will be a reoccurring theme in this course. Keith Devlin, a mathematician at Stanford University (and the Math Guy on NPR's *Weekend Edition*) has defined mathematics as, "the science of patterns." Possible topics include Mathematics and Music, Mathematics and Games, Mathematics and Art. Hopefully this exploration will help provide you with a broader appreciation of mathematics. This exploration will take place in a supportive setting using cooperative learning and guided discovery.

GOALS:

- To develop a broader perception of the nature of mathematics and its place in the world.
- To gain an understanding of how mathematicians think and work.
- To improve your analytical abilities such as reading, writing and reasoning.

STRUCTURE: As the course title indicates we will be exploring mathematics. Mathematics can not be learned passively, it must be learned actively. With this in mind the course has been designed to create a supportive setting where cooperative learning and inquiry are the primary tools for your exploration. Inquiry-Based-Learning (IBL) means that you will be provided with a series of leading questions or prompts that allow you to (re)discover and explore the topics we will be studying. (This is often called the *Socratic Method*.) The majority of the class time will be devoted to cooperative group work on questions posed to you.

WORK GROUPS: Group work will be an essential part of this course. You will be working in groups of 3 or 4 and you should sit with the same groups every day. I will not assign these groups because you will need to find people whose schedule is compatible with your own. The purpose of this is twofold. First, working in groups is essential in any job and second, working in groups is excellent opportunity to stop and think (and therefore learn) about what we are doing- with the added benefit of having someone to help work out those things you are not clear about.

CLASS WORK: Each student should have a **blue** notebook. This notebook will contain your, notes, work and answers, neatly written and organized, from the discussions/group work in class. Since you will generally not be able to complete all of the problems on which we are currently working during class, *you should expect to spend at least two hours working on problems outside of class for every hour of class time.* **All** of your work must be recorded in your notebook. *Work not included in your notebook can not be used for quizzes* (see below).

ATTENDANCE: You are expected to attend class each day and are responsible for keeping your work up to date. I will take attendance every day and you are allowed only four absences (both excused and unexcused, so use them wisely!).

ASSESSMENT: The primary means of assessment will be your written work on the questions posed in class. This will vary between handing in written answers from a topic, an in class quiz that asks you to answer *by number only* several questions from the topic under consideration or a reflective essay on the work you have completed on a topic. The quizzes will be *open notebook*. Therefore it is imperative that your progress through these problems is complete and well documented in your notebook. I will shortly hand out some guidelines for writing up your solutions.

POSTERS: During the semester each student will create a poster of a contemporary mathematician (i.e. a mathematician whose primary contributions were in the 20th and/or 21st century.) These posters will be displayed in the 4th floor hallways of Wilson Hall and will be graded by you and your peers. More details about this assignment will be given at a later date.

FINAL EXAM: There is no final exam in this class, but you will be turning in a final set of answers and a final essay which will be due during the final exam period, Wednesday December 16, 2:30 - 4:30 pm.

GRADES: Course grades will be determined using the following percentages:

Quizzes and Written Answers	55%
Posters	25%
Other Written Assignments	15%
Attendance	5%

ACADEMIC HONESTY: Academic Honesty is a vital part of any academic setting and it is expected that you will follow the College policy on Academic Honesty (see pages 41 - 42 of the College Bulletin for a full description of this policy). Assignments that are found to be in violation of this policy will be dealt with severely. Punishments can range from a poor grade on the assignment to an F for the course. No matter what the punishment, a formal letter detailing the violation will be sent to the Vice-President of Academic Affairs and placed in your Academic file.

SCALE: The minimum scale on all graded material will be the following straight scale.

95-100	A
90-94	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
67-69	D+
64-66	D
60-63	D-
below 60	F

Curves are generally not considered until the course grades are being assigned.

ADDENDUM:

- Cell phones are to be turned **off** during this class. If I catch you using a cell phone during class I reserve the right to confiscate it for the remainder of the period.
- If someone needs to reach you in an emergency, they can call the department secretary at 572-5349 or public safety at 572-5262.
- This syllabus is subject to change with **prior** notification.
- There is a copy of this syllabus on the course page at <http://www.wsc.ma.edu/math/faculty/hotchkiss/MA110/MA110.asp>