

MATH 105 SYLLABUS: SUMMER 2007
INTRODUCTION TO CONTEMPORARY MATHEMATICS

Professor: Dr. Laurie Burton
Office: AA 303

Phone: 503-838-8345
Email: burtonl@wou.edu

CLASS MEETS 1 – 3:15 p.m. MTWR Arnold Arms 104 June 25 – July 19
--

OFFICE HOURS & SCHEDULE <i>491.591 meets 6/25 – 7/12 only. 7/16 – 7/19 Burton will post additional availability</i>

Time	Monday	Tuesday	Wednesday	Thursday
8:45–9:30	<i>Office</i>	<i>Office</i>	<i>Office</i>	<i>Office</i>
9:40–12:10	491.591	491.591	491.591	491.591
12:10–12:50	<i>Lunch & Office</i>	<i>Lunch & Office</i>	<i>Lunch & Office</i>	<i>Lunch & Office</i>
13:00–15:15	105	105	105	105
15:15–16:00	<i>Office</i>	<i>Office</i>	<i>Office</i>	<i>Office</i>

✓ Please feel free to email for help as well as ask questions in class and come to office hours.

I. COURSE PREREQUISITE

An open and curious mind and the willingness to put aside any preconceived prejudices or dislikes for mathematics. Very little mathematical background will be expected and hopefully this course should be (for the most part) "self contained."

II. REQUIRED COURSE MATERIALS

- Simple calculator or a TI 83 type of model if you already have or can borrow one
- *The Heart of Mathematics: An Invitation to Effective Thinking*, 2nd edition, by Edward B. Burger and Michael Starbird

III. COURSE OVERVIEW

In this course we will consider a few of the greatest ideas of humankind—ideas comparable to the works of Shakespeare, Plato, and Michelangelo. The great ideas we will explore are within the realm of mathematics. What is mathematics? Mathematics is an artistic endeavor which requires both imagination and creativity. In this course, we will experience what mathematics is all about by delving into some beautiful and intriguing issues. There are three basic goals for this course.

- ✓ To attain a better understanding of some rich mathematical ideas.
- ✓ To build sharper skills for analyzing life issues that transcend mathematics.
- ✓ To develop a new perspective and outlook on the way you view the world.

We will cover parts of Chapter 1, Chapter 2, Chapter 4 and most of Chapter 7 and chapter 8 in this course. Although you will be challenged, the overriding theme of the course is to gain an appreciation for mathematics and to discover the power of mathematical thinking in your everyday life. We will follow the text reasonably closely although we will not cover all the material in class.

IV. COURSE WEB PAGE

There will be a link for the Math 105 webpage on my home page: <http://www.wou.edu/~burtonl>. In particular, the class webpage: "Assignments & Schedule" will be linked to your Math 105 webpage and will include the class schedule, homework assignments, homework links and due dates.

V. COURSE REQUIREMENTS AND GRADING

ITEM	%
Attendance & Participation	5
Homework	20
Quiz 1	15
Quiz 2	20
Quiz 3	20
Team Research Project / Poster Session	20
TOTAL	100

Attendance & Participation

- You must attend all classes; every class will be filled with active discussion and group activities. These experiences cannot be made up outside of class.
- You must share your thoughts, ideas, conjectures and problem solving strategies both in small groups and with the whole class
- You must work actively and effectively during all group and all class activities
- You must attentively listen and offer useful and constructive comments to other students in the class during group work and when other students present their ideas to the whole class

Completion of Course Materials

- You must carefully answer all questions and problems posed on all course materials—in class work as well as homework assignments.
- You should organize this material carefully in your course notebook and be prepared to share your work at any time

Homework Assignments

Homework questions in the *Heart of Mathematics* are called "Mindscapes" and focus on helping you achieve the overall course goals. Mindscapes will be assigned each day, collected (two class days later) and graded (some will be checked off and some will be graded in detail). *Clarity of exposition is important*, and you should strive for **well-written, polished solutions**. This usually means you should work your ideas out on scratch paper and then re-write your actual solutions for turn in a clear and concise fashion. In addition to the quality of your exposition, only neat and tidy homework will be accepted. Please type, if possible, expository answers to Mindscapes (Arial, Font 14, not bold). Tidy homework is extremely important; scribbled or untidy work, work on ripped or worn paper and work on ripped out spiral paper will not be accepted. Any work deemed unreadable will be returned to be rewritten (and will therefore be late). Any student with unreadable handwriting may be required to type all of their homework solutions. For the most part, collaboration on homework with other members of this class is allowed, although solutions must be individually written up and collaborators *should be acknowledged*. It will be made clear when collaboration is not permitted. This is an extremely compressed class; schedule your study and homework time accordingly.

Late Homework: Homework is due at the beginning of class—late work will receive a 30% per class day late deduction. All work is due by Thursday, 7/19.

Quizzes

Quizzes will be given in class and will be about 50 minutes each. Quizzes will be non-cumulative and will ask Mindscape type questions.

- ✓ Quiz 1: Thursday, July 5
- ✓ Quiz 2: Thursday, July 12
- ✓ Quiz 3: Thursday, July 19

Makeup quizzes will only be available in the case of documented emergency. Prior notification and my agreement are required. My voice mail and email are always on; there is no excuse for not contacting me prior to missing a quiz (in all but the most extreme circumstances). Mathematics 105 is offered six times during the academic year at WOU and is also available at many other OUS institutions. If you are planning on missing class on Thursday, July 5 for an extended July 4 event, you should reschedule and take Mathematics 105 during a different academic term.

Research Project/Poster Session

The only way to really understand mathematics is to learn and discover it on one's own. Thus teams of students will select mathematical topics (from our text) outside of those covered in our course, read and teach themselves any necessary background to understand their topic, and then investigate the topic. By working together, the individuals in each team can learn from each other and share the experience. Each team will write a final paper on their findings and present a poster display during a class poster session on the last day of class. Also, each student will write a short individual statement regarding the experience. A team and topic choice report, a project outline and a draft version of your project will be collected: Expectations, due dates and explanations are noted in more detail on your course webpage and in additional course handouts. Students are invited and encouraged to discuss all phases of their research projects with me during office hours.

Teams will be self-selected (as much as possible). Team selection and mathematical topic selection will be on Thursday, June 28 during class.

Teams must meet outside of class to complete their projects. Almost all of the time needed for working on your research project must be done outside of class. Team selection time occurs during the first week of class (in class) and a bit of final practice and wrap up time is scheduled for Wednesday, the last week of class (the day before the papers are due and the presentations are given).

VI. APPROPRIATE CLASSROOM BEHAVIOR

You are ultimately responsible for your own attendance and performance. Disruptive classroom behavior of any kind, such as talking during lecture or consistently coming to class late etc., is not appropriate. Proscribed Conduct for all students is described in the University Catalog. In particular for this course any student found cheating on an exam or copying from another student's exam paper will receive a zero score on that exam.

VII. STANDARD GRADING FOR THIS COURSE

Your grade for this course will be based on the following with A-, B+, B-, C+, C- given as is appropriate: A—90%, B—80%, C—70%, D—60%, F—below 60%

VIII. LEARNING DISABILITIES

If you have a documented learning disability, please talk to me during the first few days of class, I will be more than happy to accommodate you in any way that I can. If you have a documented disability which requires any academic accommodations, you must go to the Office of Disability Services (ODS) for appropriate coordination of your accommodations. You can drop by APSC 405 or contact ODS at (503) 838-8250 (V,TTY) to schedule an appointment.

IX. INCOMPLETE POLICY

An Incomplete can only be granted for a student who is passing a class and has a documented emergency that prevents them from completing the course.