Math 130: Contemporary Mathematics
Fall 2012
Course Procedures

Professor: Josh Laison
Ford 215, x6689, jlaison@willamette.edu

Office Hours:
Monday 10:30–11:30
Tuesday 10:00–11:30, at the Bistro
Wednesday 10:30–11:30
Thursday 3:00–4:00
or anytime by appointment or by catching me in my office. You can see my schedule and available times at http://www.willamette.edu/~jlaison

Class Meetings: Ford 302
Section 1: MWF 9:10–10:10
Section 2: MWF 1:50–02:50

Text: The Heart of Mathematics, Edward Burger and Michael Starbird,
2nd edition preferred
Course Web Page: http://www.willamette.edu/~jlaison/contemporary.html

Grading:

<table>
<thead>
<tr>
<th>Daily problems (around 25)</th>
<th>25%</th>
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<tbody>
<tr>
<td>Investigations (around 6)</td>
<td>20%</td>
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<tr>
<td>Quizzes (around 4)</td>
<td>20%</td>
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<tr>
<td>Final project</td>
<td>15%</td>
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<tr>
<td>Class attendance and participation (41 days)</td>
<td>20%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Course Goals:

- Have fun doing mathematics.
- Think deeply and creatively about mathematics.
- Create our own mathematical ideas.
- Make judgements and draw appropriate conclusions based on quantitative information.
- Gain an understanding and appreciation for the work of professional mathematicians.

The Textbook:
The text is probably different from any other math text you have seen (I know that is true for me) and you might be surprised that it is actually fun to read. Certainly, reading it will provide you with greater understanding of the material of the class, and improve your grade.
I will try to assign problems in the Daily Problem assignments that are common to all three editions, but if you have an edition other than the 2nd edition, you might occasionally need to borrow the 2nd edition from a friend.

Ways to Get Unconfused:

- I encourage you to find classmates to work together with. Although different people have different working styles, I find math problems much more interesting and less frustrating in a group than by myself. Also, there are enough Contemporary Math students this semester to create a critical mass in the math hearth, which makes finding classmates to work with much easier. Hang out in the math hearth, and your classmates will too!

- Find me in my office during my office hours or at other times, and I will be more than happy to answer questions. Feel free to hang out in the math hearth or in my office and work on homework there.

- Come to the drop-in tutoring sessions held by the Learning Center. Student tutors will be available to help with Contemporary Math homework most nights of the week, in a classroom in Ford. These are also great places to form study groups. Stay tuned for times and locations!

Assignments:

In this course, you will learn quite a lot of mathematics, but with a different emphasis than other mathematics courses you may have taken in the past. The course is not a prerequisite for any other, and it is unlikely that you will require the material you learn in this course for your career after you graduate. The material is simply presented to satisfy your own intellectual curiosity.

I will try as hard as I can to avoid making any problem you attempt in this course tedious or overly frustrating. Mathematics is all about solving puzzles, exploring patterns, and getting insights into new ideas. For your part, try not to race through the problem assignments with the goal of arriving at the solution as quickly as possible. Play with the ideas! Invent new problems and solve those! Discuss the problems with your friends and classmates! The problems are intended not as hurdles to be leapt over, but as intellectual challenges to be enjoyed. I hope that you will enjoy them as much as I do. To encourage you to think creatively, particularly interesting, creative, or unique solutions to any problem in this course will be given extra credit. This includes solving a related question that you pose yourself.

Daily Problems: These will be due most Mondays, Wednesdays, and Fridays by 4:30 PM, starting Friday, August 31, and should be turned in either to me in class, or to the folder outside my office, Ford 215. These are the only component of the course graded by a student grader.

Investigations: These will be due approximately once every two weeks. The goal of these assignments is to give you a chance to work on more involved, more open-ended mathematical
problems. Since you have so long to complete these assignments, I'll expect you to spend more time thinking about them, and write up your findings in paper form, not short-answer form. Use complete sentences, even when presenting mathematical formulas. Explain your approach to the problem and your technique of solution. You do not need to show every simplifying step of a computation.

**Quizzes:** We will have an in-class quiz about once every three and a half weeks. They should each take a full class. The quizzes will test your understanding of the fundamental ideas of the course, emphasizing conceptual ideas over calculation.

**Final project:** The final project is another opportunity for you to work on a more involved, open-ended problem, in a team of two. For the final project, you and your teammate will start with a suggested topic and then guide the direction of your investigation so that you ask and answer the questions yourselves. You will submit a paper and give a 15-minute presentation, during class or during the scheduled final exam time. More information on the final project, including a list of suggested topics, will be available soon.

**Missed Classes:** Attendance and participation in class counts for 20% of your final grade, so every non-excused absence will result in about a half a percent reduction of your final grade. Attendance by itself will not get you an A for class participation – you should make an effort to be an active participant in class activities and discussions.

**Late Assignments:** I expect everyone to attend all classes and turn in all homework assignments on time. Unfortunately, it is inevitable that some people will have crises during the semester that will prevent them from turning in homework on time. If this happens to you, talk to me about it, and I will generally be sympathetic.

**Disabilities:** If you have a documented disability for which accommodations may be required in this class, please contact me to discuss your needs. Additionally, you will need to register with Disability and Learning Services in the Bishop Wellness Center within the first two weeks of class. All such discussions will be confidential.

**Academic Honesty:** Cheating and plagiarism are serious offenses and will be treated severely, in accordance with college policy. In addition, I am personally insulted by such behavior. So please don’t do it. These are the practices I expect you to follow in each of the components of the course:

- **on daily problems and investigations:** You may, and are encouraged to, discuss the homework with your classmates, get help from tutors, calculators, or your textbook. However, your submitted written work should be your own. Additionally, you may not consult other sources such as the library or the internet.

- **on the quizzes:** You may not receive aid from any source other than me on the quizzes. Copying others’ work, or providing your work to be copied by other students, is cheating.

- **on the final project:** The members of the team should contribute equally to producing the final product. Do not put your name on work written by others.