Math 476: Modern Geometry
Fall 2013
Course Procedures

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

Office Hours:
Monday 3:00–4:00
Wednesday 3:00–4:00
Thursday 9:30–11:30, at the Bistro
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 222, 1:50-2:50, Monday, Wednesday, Friday
Textbook: Discrete and Computational Geometry, Satyan L. Devadoss and Joseph O’Rourke
Course Web Page: http://www.willamette.edu/~jlaison/geometry.html

Grading:

<table>
<thead>
<tr>
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<th>Percentage</th>
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<tbody>
<tr>
<td>Homework assignments (approx. 7)</td>
<td>25%</td>
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<tr>
<td>Quizzes (approx. 5)</td>
<td>25%</td>
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<tr>
<td>Take-home exams (2)</td>
<td>25%</td>
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<tr>
<td>Final project</td>
<td>15%</td>
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<tr>
<td>Class participation</td>
<td>10%</td>
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<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Goals of the Course:

- Gain knowledge of a variety of topics in discrete geometry.
- Explore connections between different fields of mathematics that provide useful tools
to solve geometric problems.
- Gain experience thinking about geometric ideas from both formal proof and algorithmic
  viewpoints.
- Gain experience communicating and teaching geometry to a variety of audiences.
- Have fun.

Topics Covered: Since the field of discrete geometry is so new, there are no established
standard topics. We will sample a variety of topics from the text as time permits: triangula-
tions of polygons and point sets in two or more dimensions; convex hulls; Voronoi diagrams;
polyhedra; configuration spaces.

Homework assignments: These assignments will be due about once every week and a half.
You are encouraged to work together on these problems and form homework groups. How-
ever, please write your solutions to these problems in your own words. You are expected to
use \LaTeX to write your solutions to these assignments. Please use the \texttt{\usepackage[setspace, doublespacing]} options in your preamble to give me enough room for comments. You may use the \texttt{\vspace*{2in}} command to leave space and draw in pictures by hand.

Please use the math hearth and my office hours often to work together and ask questions.

\textbf{Take-home exams:} You may not consult any person about these assignments other than me. You may not consult any source about these assignments other than your textbook, your notes, and class handouts. Don’t hesitate to ask me if you have questions on a take-home exam. Please leave ample time to ask questions before the exam is due.

\textbf{Quizzes:} We will have an in-class quiz about once every three weeks. They should take about 45 minutes each. The quizzes will test your understanding of the fundamental ideas of the course, including definitions, examples, and short proofs.

\textbf{Final project:} In a group of two, you will develop a short presentation to give to students in a Salem high school about a topic you have seen in this course. I will provide more details about the final project soon.

\textbf{Attendance at the Math Department Colloquium:} According to math department policy, since you are enrolled in a 400-level mathematics course, you are required to attend at least 4 mathematics department colloquium talks. The goal of this requirement is to expose you to a wider range of mathematics, and to make you want to go to more than 4 talks! I hope you will decide by the end of the semester, as I have, that math talks are a lot of fun. If you miss this requirement, points will be deducted from your final grade.

\textbf{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.

\textbf{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:

- \textbf{on the homework assignments:} You may, and are encouraged to, discuss the homework with anyone, get help from your textbook, notes, computer algebra systems, etc. However, your submitted written work should be your own.

- \textbf{on the quizzes:} You may not consult any outside sources, living, written, or electronic, other than me.

- \textbf{on the exams:} You may consult your text and notes. You may not discuss them with anyone other than me.