

UNST 421-Sp 2016 **Mathematics and Society**: Information

Professor M Paul Latiolais **Office:** NH M418 **email:** hmpl@pdx.edu
 503-725-3632 Office hours: M & W 9-10 am or by appointment

OBJECTIVES	PROCESS	ASSESSMENT
Appreciate the role of mathematics in the development of science and technology	Your own explorations Listening to presentations by peers	Final paper Feedback forms
Understand the impact of mathematics avoidance on workforce needs and on marginalized populations	Readings Guest presenters	Short essays
Achieve a deeper understanding of several areas of mathematics, connections among those areas and applications to other disciplines	Your own explorations Listening to presentations by peers & writing feedback comments	Final paper Project presentations
Achieve facility in presenting math and science information to a general audience	Presentations to pre-college students	Practice presentations to peers Student & teacher feedback to pre-college presentations

How is my grade determined? Read the details on the attachment “Grade determined”; the main course requirements are a comprehensive paper and tutoring pre-college students.

Paper: Most of your efforts will be an exploration of a topic of your choice.

The topic must involve either: 1) more than one area of mathematics
 Or 2) an application of math to another discipline

How do we find pre-college presentation opportunities? You may arrange your own contacts or I will arrange contacts through the Portland Public Schools Gear Up program.

Do we work in groups? You may work on your projects individually or as part of a group. If you are working as part of a group, the group should have no more than 4 members. Note that your grade will be determined individually: In the final paper, designate the portions each group member is responsible for; each group member is responsible for leading a pre-college presentation (even if it’s the same presentation for the group)—i.e. if there are 4 group members, give the presentation at least 4 times.

Working in pairs for pre-college presentations: Even if you are working on your project individually, go to pre-college presentations in pairs: main presenter and assistant.

How do we find a mathematics topic?

- Math Horizons (available in the Math Resource Center)
- Mathematics Intelligencer (available in the Math Resource Center)
- Websites (a starting point with lots of links is Ivar Peterson’s Math Trek:
http://www.maa.org/mathland/mathtrek_5_11_98.html)
- **Suggestions, Pieter???**

Homework: There will be daily homework assignments; some of these will be short essays on readings or on presentations by guests, and some of these will be short papers describing progress on your project or on your tutoring experiences.

THIS COURSE IS DIFFERENT!!!

We just want to lay down the ground rules at the beginning so that you know what you're signing up for:

1. This is a 6-credit course; THIS MEANS YOU ARE DOING 2 COURSES AT ONCE:
 - i) Math project, culminating in a comprehensive paper
 - ii) Society issues, including tutoring at the pre-college level

2. Just as completion of certain components (e.g. final paper/exam) are required in order to pass other courses, there are some "absolute" requirements for this course:

Society:

- a) At least 4 essays on social issues; assignments listed on "Homework" sheet
- b) At least 1.5 hours of tutoring per week for a minimum of 8 weeks
- c) Feedback from tutoring supervisor
- d) End of term essay on your experience and how it effected your perspective on Mathematics and its role in Society.

Mathematics:

- a) At least 1 presentation to the class about your topic; you choose your own topic, but it must include 2 or more areas of math or an application of math to another discipline
- b) A comprehensive paper (or a section of a paper if you are part of a team) which includes at least one mathematical proof
- c) Completed feedback forms on at least 10 in-class project presentations given by other students in the class

NOTE: Satisfactory completion of this list earns a "C". More is required to earn a higher grade; see "How is your grade determined?"

Consequence: Your grade is "F" if any of the above are not completed in a satisfactory manner.

3. Most coursework consists of your independent explorations: library and/or web searches, finding people who know about your topic and asking them about it, preparing presentations, and writing papers.

Consequence: It's too easy to procrastinate, so you need to schedule time for your independent work throughout the week; pretend this class meets 3 times per week and use the other 2 hours for your independent work, besides the time (at least 6 hours per week) allocated for homework assignments.

Now that you understand the "bottom line," let's work hard and have some wonderful experiences!!