Course Syllabus
Math – 355: Biomathematics Workshop
Winter 2014

Professor: Ian Besse	**Office:** Price 208
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Lecture Location: Price Hall 214	**Textbook:** No textbook. Readings posted on Moodle.
Lecture Times: Weekdays 9:00 AM – Noon (Additional times TBA)	**Office Hours:** Drop-in and by appointment availability.

Course Description:
This course consists of several modules designed around a real-world mathematical modeling problem related to the emergence of red algae blooms in the Columbia River estuary. It is taught in a workshop format with class time divided between lecture sessions, during which the mathematical, computational, geophysical and biochemical aspects of the problem are introduced, and breakout sessions, during which student work in teams engaged in the task of generating a solution to the real-world problem. Topics will include differential equations, numerical methods, time series analysis, MATLAB programming, biological aspects influencing algae blooms, physical aspects influencing algae blooms, general biogeochemistry of the Columbia River estuary, and tribal history and law related to the Columbia River estuary. Lectures are scheduled for 9:00 AM – Noon each weekday. Additionally, a day trip to visit the Center for Coastal Margin Observation and Prediction facility on OHSU's Portland campus will be required. This course will require students to spend a substantial amount of time outside of class working on mini-projects in groups and reading supplementary material.
Prerequisites: MATH 227, and one of the following:
CS-150 Introduction to Computer Science I
BIOL-202 General Biology I
PHY-202 Introductory Physics I
PHY-232 Gen Physics I-Workshop Physics I
CHEM-220 General Chemistry I
ENV-200 Introduction to Environmental Science

Course Format and Grading:
The course will be taught in a workshop style. Lectures will be used for the delivery of content modules on a wide variety of topics. These mini-courses will be punctuated with activities, in which you will be immediately putting to use what you have learned. I will deliver many modules, but content experts from CMOP and elsewhere will deliver others. Assignments, supplemental materials, grades, and this syllabus can be viewed on the course Moodle site.
In-class Activities and Homework (30% individual, 30% group work): Many of the course modules will have an in-class activity and/or a homework assignment associated with them. These activities are designed to assess the degree to which a student has met the objectives (i.e. grasped key concepts or acquired key skills) of the module. Some of these will be individual assessments; others will be group work.
Participation and Collaboration (20%): This course is specifically designed to provide an active and collaborative learning opportunity. As such, a student's willingness to engage with the course content, with lecturers and with their classmates is absolutely paramount for a successful experience. Students will be assessed based on the value of their contributions to class discussions and to activities involving group work.

Final Project Report (20%): The culmination of the course will be the submission a formal solution, in the form of a technical report, to the real-world mathematical modeling problem that defines the theme for the course (in this case, the emergence of *Mesodinium rubrum* blooms). Students will work in interdisciplinary teams of three throughout the term to formulate a solution to this problem.

Course grade breakdown:

Overall %	Letter Grade
[93,100]	A
[90,93)	A-
[87,90)	B+
[83,87)	B
[80,83)	B-
[77,80)	C+
[73,77)	C
[70,73)	C-
[60,70)	D
[0,60)	F

Important Dates:

Wed. Jan. 8: Last day to add/drop courses with no record.
Wed. Jan. 15: Last day to withdraw
Mon. Jan. 20: MLK Jr. Day – No Class
Wed. Jan. 22: Final Project Papers due

Expectations

- Attend class, participate in class discussions, and ask questions.
- Read all assigned readings.
- Complete all assigned work neatly, thoroughly, and on-time.
- Engage in additional research to successfully formulate a solution to the modeling problem.
- Seek assistance from instructor or guest lecturer when difficulties arise.

Attendance Policy

Attendance is expected. Students with a record of arriving late or missing class will receive a warning and an alert of academic difficulty may be filed with the Associate Dean for Student Academic Affairs. If the behavior continues, further action (from a lower final grade to dismissal from the course) may result. Absences due to official Pacific University events are excused as long as you let me know at least one week in advance, so we can work together to schedule any necessary make-up activities.

Academic Misconduct Policy

Pacific University has no tolerance for academic misconduct/dishonesty. It is university policy that all acts of misconduct and dishonesty be reported to the Associate Dean for Student Academic Affairs. Additionally, grade-related sanctions for such misconduct may be imposed at the discretion of the course instructor. These sanctions can range from a reduction of grade on a single assignment to an “F” for the course. Depending upon the severity of the actions, academic misconduct may result in suspension or dismissal from the university. Forms of academic misconduct include, but are not limited to, plagiarism, fabrication, cheating, tampering with grades, forging signatures, and using electronic information resources in violation of acceptable use policies.

Learning Support Services for Students with Disabilities

If you have documented challenges that will impede your learning in any way, please contact our LSS office in Scott Hall (ext.2107). The Director will meet with students, review the documentation of their disabilities, and discuss the services that Pacific offers and any appropriate ADA accommodations for specific courses.

Late/Missed Coursework Policy

Due dates for all coursework are firm. Late work may incur a deduction of some, or all, points.

Be advised that everything listed in this syllabus is somewhat tentative and subject to minor changes as circumstances dictate. However, any changes that become necessary will be communicated as soon as possible to students either during lectures, through email, or on Moodle.