

Course: Environmental Transport Phenomena

Lecturer: Dr. Higgins

Teaching Assistants: Daniel Nadeau, Nikki Vercauteren, Marc Diebolt

Lecture Times 13:15-15:00 Friday Afternoons, GR A 330

Exercise Session: 15:15-16:00 Friday Afternoons, GR A 330

Expected Topics Each Week

Week	Topic
1	Introduction and Basic Tools, project example Diffusion I
2	Diffusion II Advection Diffusion Equation I
3	Advection Diffusion equation II
4	Mixing and Transport in Rivers (Turbulence I)
5	Transformations, Biological and Chemical MIDTERM
6	Boundary Exchanges Surface reactions
7	Mirror points Atmospheric Mixing (Turbulence II)
8	Numerical Approaches I, selection of projects
9	Numerical approaches II
10	Project presentations

Textbook:

The course will follow the book: Special Topics in Mixing and Transport Processes in the Environment by Scott A. Socolofsky and Gerhard H. Jirka.

Course Grade:

Homework: 10%, Exam: 45%, Project: 45%

Homework:

Homework will be assigned weekly. Each Monday an assignment will be given via the Moodle page. The homework is due the following Monday at 17:00. Late homework is not accepted. Students who turn in the homework late will be given no credit. Each assignment will be fully graded, with homework grades accounting for 10% of the overall course grade.

Exam:

a midterm exam is scheduled for 6-11-2009, and will cover the first 6 chapters and appendix B of the book. The exam will be given in class and will account for 45% of the final grade.

Final Project:

The final project accounts for 45% of the total course grade. Students are allowed to work in teams no larger than 3 people. You will select your project in the 10th week of the course, and be expected to work on the project for the remainder of the course. Because of the extra work required for the project, homework assignments will not be given after all students have selected projects. Evaluation of the project will be assessed through a 5 page report and a 30 minute oral exam. The 30 minute exam will be broken into 2 parts, a 15 minute presentation of the project, followed by a 15 minute question and answer session. The presentation will be scheduled during the exam period in January.