

**SYLLABUS**  
**11:375:203:01 – PHYSICAL PRINCIPLES**  
**3:55-5:15 p.m. Mon. & Wed.**  
**CDL Room 109**

**Instructors:** *Robert Miskewitz*

**Office Location:** *ENR 334 and Weeks 328a*

**Office Hours:** *by appt.*

**Grading:**

Homework	15%
Student Project	15%
In Class Quizzes (3)	45%
End Term Exam	25%

**Homework policy:**

Homework will be assigned on Monday and is due at the beginning of class the following Monday. Late homework will be discounted 15% for each day it is late. You are encouraged to help each other learn the material, BUT THE HOMEWORK YOU TURN IN MUST BE YOUR OWN WORK. Please write computer programs and/or use spreadsheets to do your OWN homework, but you must document your work completely including sample calculations. There is no reason why two persons should submit the same spreadsheet. Homework will not be assigned every week.

**Class Schedule:**

1. Introduction
2. Units and conversion
3. Physical properties of environmental systems
4. Phase distribution properties
5. Mass balance approach and batch systems
6. Mass transfer and diffusion process
7. Mass transport processes
8. Reaction-transport couple process
9. Energy and energy transport
10. Energy balance approach
11. Thermodynamics laws and applications
12. Momentum and momentum balance
13. General Dynamic Equations
14. Bernoulli equation and Darcy's law
15. Transport of mass, energy and momentum

Please note that this schedule is preliminary, and may change due to the pace of the class, weather, etc.