

## BIM 020: Fundamentals of Bioengineering, Spring 2009

University of California, Davis, Department of Biomedical Engineering  
CRN: 64785 (4 Units)

**Schedule:** Lectures: TR 2:10 – 4:00 PM, Veihmeyer Hall 212

**Instructor:** **Soichiro Yamada** (syamada@ucdavis.edu)  
Office: GBSF 2317, Phone: (530) 752-7251  
Office hour: Monday and Wednesday: 11-12pm @1<sup>st</sup> floor food court MU  
Tuesday and Thursday: 12-1pm @GBSF 2317  
Except Apr 16 and May 14: 11:30-12:30pm @GBSF 2317

**TA:** **Kristen Elli** (kmelli@ucdavis.edu)  
Office hour: Wednesday 12:30-1:30pm @GBSF 3303  
**Beth Doughty** (doughty.beth@gmail.com)  
Office hour: Thursday 9-10am @GBSF 3303

**Textbook:** **Bioengineering Fundamentals**, Saterbak et al., 2007 Pearson Prentice Hall

**Exams and homework:** Two midterm exams and one final exam. Homework problems will be assigned (be aware of the format and must use Matlab when asked – see attached). No make up exams. No late homework accepted. The grade will be based on: homework (10%), midterm I (20%), midterm II (30%), and final exam (40%).

### Course Schedule:

	<b>Date</b>	<b>Topic</b>	<b>Chapter</b>
1	Mar 31	Units and dimensions	Ch 1
2	Apr 2	Accounting and conservation equations	Ch 2
3	Apr 7	Open, non-reactive, steady-state systems	3.1-3.5
4	Apr 9	Systems with multi-components and units	3.6-3.7
5	Apr 14	Systems with chemical reactions	3.8
6	Apr 16	Systems with chemical reactions	3.8
7	Apr 21	<b>Midterm I (20%)</b>	
8	Apr 23	Dynamic systems (mass)	3.9
9	Apr 28	Basic energy concepts	4.1-4.4
10	Apr 30	Calculation of enthalpy, Open, steady-state systems	4.5-4.6
11	May 5	Calculation of enthalpy in reactive processes	4.8-4.9
12	May 7	Dynamic systems (energy)	4.10
13	May 12	<b>Midterm II (30%)</b>	
14	May 14	Basic momentum concepts	6.2
15	May 19	Rigid-body and fluid statics	6.5, 6.6
16	May 21	Steady-state system	6.7, 6.8
17	May 26	Steady-state system	6.7, 6.8
18	May 28	Reynolds number	6.10
19	Jun 2	Bernoulli equations	6.11
20	Jun 4	<b>Final (40%)</b>	