# BIOMEDICAL ENGINEERING AND BIOTECHNOLOGY UNIVERSITY OF MASSACHUSETTS LOWELL

#### <u>IB 500</u>

#### INTRODUCTION TO BIOMEDICAL ENGINEERING AND BIOTECHNOLOGY

SYLLABUS: Fall 2011

Instructor: Bryan Buchholz, Ph.D. Office Hours: Monday, 1:00 - 2:30 P.M.

Kitson 204D Wednesday, 4:30 - 6:00 P.M.

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TA: Jun Pang

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#### **Course Description**

The course will be a survey of different topic areas within biomedical engineering and biotechnology. The course will emphasize a multidisciplinary approach to current topics in the range of academic disciplines and gives students their first exposure to faculty research areas. One goal of the course will be to help students choose a specialization option.

#### **General Information**

Time: Wednesday, 1:30 - 4:20 P.M.

Location: Olney 316

#### **Grading**

The course grade will primarily be based on a written report and oral presentation of a course project. Weekly assignments will also contribute to the course grade. The course will be run as a lecture/seminar. Students are expected to attend all classes and participate in class discussions. Attendance and class participation will be considered in determining the final course grade.

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### TENTATIVE COURSE OUTLINE

**Fall 2011** 

DATE	TENTATIVE TOPIC	PRESENTER
September 7	Biomechanics	Buchholz (Work Envir)
September 14	Single Cell Models of Neurodegenerative Disease Cultured Cells as Model Systems	Hall (Biology) Shea (Biology)
September 21	Biomedical Applications of Polymer Colloids Biomedical Applications of Nanotechnology	Budhlall (Plast Eng) Bello (Work Envir)
September 28	Biosensors Bioinformatics: Scientific Visualization	Marx (Chemistry) Grinstein (Comp Sci)
October 5	Biochemical Functions of Enzymes and Other Proteins Biomanufacturing	Guo (Biology) Yoon (Chem Eng)
October 12	Biomedical Applications of Polymers Molecular and Developmental Biology	Schmidt (Plas Eng) Gaines (Biology)
October 19	Anemia and Nutritional Biotechnology Virology	Handleman (CLNS) Graves (Biology)
October 26	Biosensors Drug Eluting Stents	Wang (ECE) Wu (BMEBT)
November 2	Respiratory and Rigid Body Motion Compensation in Cardiac Perfusion SPECT Cholesterol and Cardiovascular Disease	Pretorious (UMMS) Garelnabi (CLNS)
November 9	Integrative Physiology Medical Physics	Collins (Phys Ther) Sajo (Physics)
November 16	Nanotechnology, Green Chemistry and Biotechnology Studies of Movement: Reptiles	Manohar (Chem Eng) Young (Phys Ther)
November 23	Student Presentations???	
November 30	Student Presentations	
December 7	Student Presentations / Final Report Due	