TO: The Engineering Faculty
FROM: Department of Biomedical Engineering
RE: New Graduate-Level Course

The Department of Biomedical Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

**BME 690 Seminar in Biomedical Engineering**

**A. Course Description**

Sem. 1 and 2. Class 3, cr. 1. (repeated for credit)

Seminar course covering a broad range of current research topics spanning Biomedical Engineering. Seminar presentations by representatives from industry, faculty from Purdue University and other external institutions. Required of Biomedical Engineering graduate students at Purdue; MS and PhD students must complete two and four semesters (respectively) prior to graduation.

**B. Reason:**

This seminar series will benefit the BME graduate students through: i) an enhanced knowledge of research outside of their own thesis project/area; ii) an exposure to current research in the field both internally and externally to Purdue; and iii) a formal interaction of the BME graduate student community.

This course has been offered two times on an experimental basis and has received high interest from graduate students representing various engineering departments.

George R. Wodicka
Professor and Head

**Supporting Documentation**

**Course Instructor:** Karen Haberstroh

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**Student Population:**
The student population will consist of graduate students from various engineering disciplines. The majority of the students, however, will be from the BME department since this is a required course for our BME graduate students.

This course is required for all BME graduate students. MS candidates are required to take and pass the course for 2 semesters prior to graduation. PhD candidates are required to take and pass the course for 4 semesters prior to graduation. To receive a passing grade one must have attended at least 7 seminars during the semester. Of these 7 required seminars, 5 must be the BME graduate seminars, and 2 may be substituted with seminars from other departments. Forms will be provided in advance to verify attendance at other departmental seminars.

**Course Format:**
This is a seminar course. Time in each classroom session will be spent listening to various research seminar speakers. During each academic semester, a minimum of 7 seminars will be scheduled, but additional seminars may be offered on other days or times.

**Sample Course Content (from Fall 2003 and Spring 2004):**

| Lecture | Regularly Scheduled Seminar Speaker and Seminar Title |
|---|---|
| 1 | Dr. Albena Ivanisevic, Assistant Professor of Biomedical Engineering and Chemistry, Purdue University, "Fabrication and Characterization of Biomimetic Templates." |
| 2 | Dr. Steven Frankel, School of Mechanical Engineering, Purdue University, "Direct Numerical Simulations of Pulsatile Flow through Stenotic Blood Vessels." |
| 3 | Dr. Ji-Xin Cheng, Assistant Professor of Biomedical Engineering and Chemistry, Purdue University, "Running Naked Across Indiana: RNAi Targeting of Mechanisms Required for Cell Mitosis." |
| 4 | Dr. Karen M Haberstroh, Department of Biomedical Engineering, Purdue University, "In Vitro Models for Studying Cell Responses to Altered Mechanical Environments." |
| 5 | Dr. Sherry Voytik-Harbin, Assistant Professor of Biomedical Engineering and Basic Medical Sciences, Purdue University, "Functional Tissue Engineering and the Control of Cell Fate." |
| 6 | Dr. Gabriel Chu, Assistant Professor of Biomedical Engineering, IUPUI, "Solid Freeform Fabrication of Tissue Engineering Scaffolds." |
| 7 | Dr. Kenneth Pimple, Indiana University Center for Bioethics and Director of Teaching Research Ethics Programs at the Poynter Center for the Study of Ethics and American Institutions, "The Social Value of Biomedical Engineering." |
| 8 | Dr. Ann Rundell, Department of Biomedical Engineering, Purdue University, "Analysis and Modeling of the T-Cell Signaling Events Initialized upon Receptor Engagement." |
| 9 | Dr Ray Eby, Vice President of Product Development, NanoInk, Inc., "Towards Nanomanufacture: The Development of Dip Pen Nanolithography™" |
| 10 | Dr. John Schild, Department of Biomedical Engineering and Electrical Engineering, Indiana University Purdue University at Indianapolis, "System for Electrophysiological Study of Computer Modeled TTX-sensitive and TTX-Resistive $Na^+$ Currents." |
| 11 | Dr. Jennifer Hovis, Department of Chemistry and Biomedical Engineering, Purdue University, "Structure and Stability in Cell Membranes." |
| 12 | Dr. Fred Pavalko, Department of Cellular and Integrative Physiology, Indiana University Purdue University at Indianapolis, "Cellular Mechanisms in Mechanotransduction." |
| 13 | Dr. Jenna Rickus, Department of Agricultural and Biological Engineering and Biomedical Engineering, Purdue University, "Engineering GABA |

Based Therapies for Neurological Disorders and Injury."

14 Dr. Frank Fisher, "Peer Instruction and Web-based Enhancement of Undergraduate Engineering Courses: Practical Implementation"