to Grad School 4/29/02
X per Mary 12/04

Office of the Registrar
FORM 40 REV. 2/99

PURDUE UNIVERSITY
REQUEST FOR ADDITION, DELETION, OR REVISION OF A COURSE

SCHOOL DOCUMENT NO. 30-01

GRADUATE COUNCIL DOCUMENT NO.

DEPARTMENT Biomedical Engineering DATE SUBMITTED 2/28/02 DATE EFFECTIVE S-2003

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

PURPOSE

- [ ] 1. Deletion of a course
- [x] 2. New course with supporting documents
- [ ] 3. Add existing course offered at another campus
- [ ] 4. Change in course number at same level
- [ ] 5. Downgrading of course level
- [ ] 6. Upgrading of course level
- [ ] 7. Change in course title
- [ ] 8. Change in semesters offered
- [ ] 9. Change in course credit/type
- [ ] 10. Change in course attributes
- [ ] 11. Change in instructional hours
- [ ] 12. Change in prerequisites
- [ ] 13. Change in description of course content
- [ ] 14. Transfer of course from one dept. to another

EXISTING:
Subject Abbreviation BME
Course Number 695

PROPOSED:
Subject Abbreviation BME
Course Number 656

Proposed Title Confocal Microscopy
Variable Title Yes [ ] No [x]

Abbreviated Title Confocal Microscopy
Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

SEMESTERS OFFERED
Check All That Apply.
Summer [ ] Fall [ ] Ag Winter [ ] Spring [x]

CROSS LISTED COURSES
BMS 656

CREDIT TYPE
1. Fixed Credit: Cr. Hrs. 2
2. Variable Credit Range:
   Minimum Cr. Hrs
   (Check One) To [ ] Or [ ]
   Maximum Cr. Hrs.
3. Equivalent Credit: Yes [ ] No [ ]
4. Thesis Credit: Yes [ ] No [ ]

COURSE ATTRIBUTES: Check All That Apply.
1. Pass/Not Pass Only [ ]
2. Repeatable for Credit [ ]
3. Available for Credit by Examination [ ]
4. Designator Required [x]
5. Special Fees [ ]
6. Approval Required for Enrollment
   Department [ ]
   Instructor [x]

Instructional Type	Class Hours	FTE	Instructional Type	Class Hours	FTE	Instructional Type	Class Hours	FTE
Primary			Auto-tutorial			Thesis		
Secondary			Ind. Study			Observation		
Laboratory			Clinic			Matls Based		
Lab. Prep.			Experiential					

CAMPUS(ES) INVOLVED
Calumet [ ]
Fort Wayne [ ]
Indianapolis [ ]
North Central [ ]
West Lafayette [x]
Off Campus [ ]

COURSE DESCRIPTION (PREREQUISITES INCLUDED):
Theory and application of cellular and molecular imaging technologies including confocal and multi-photon microscopy. Optics, electronics, data collection, and visualization techniques. Collection and analysis of 2D and 3D image sets from various biological specimens.

Calumet Undergrad Curriculum Committee	Date	Calumet Department Head	Date	Calumet School Dean	Date
Fort Wayne Department Head	Date	Fort Wayne School Dean	Date	Fort Wayne Chancellor (C. D. Sutton)	Date
				Apr. for Faculty #962 C.D.Sutton, Chair 4/26/02	
Indianapolis Department Head	Date	Indianapolis School Dean	Date	Undergrad Curriculum Committee	Date
North Central Department Head	Date	North Central Vice Chancellor	Date	Date Approved by Graduate Council	
(Gary R Wodicka)	4/8/02	(signature)	29 Apr 02		
West Lafayette Department Head	Date	West Lafayette School Dean	Date	Graduate Council Secretary	Date
Graduate Area Committee Convener	Date	Graduate Dean	Date	West Lafayette Registrar	Date

OFFICE OF THE REGISTRAR

Engineering Faculty Document #30-01
February 27, 2002

To: Faculty of the Schools of Engineering

From: Department of Biomedical Engineering

Subject: New Graduate Level Course

The Department of Biomedical Engineering has approved the following new course. Approval of the Faculty of the Schools of Engineering is requested.

BME 656 / BMS 634 Confocal Microscopy: Techniques and Application Module

A. Course Description

Sem. 2, Class 3, Lab 8, cr. 2 (5 wks)
Prerequisite: Permission of the Instructor Required

Theory and application of cellular and molecular imaging technologies including confocal and multi-photon microscopy. Optics, electronics, data collection, and visualization techniques. Collection and analysis of 2D and 3D image sets from various biological specimens.

B. Reason

This course has been offered three times on an experimental basis and has received a high level of student interest. In this course, students are introduced to the fundamental biophysical and optical basis of state-of-the-art imaging technologies including confocal microscopy. The course provides students with hands-on experience and practical knowledge regarding the application of such imaging technology for the study of physiological systems and processes.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE COMMITTEE ON
FACULTY RELATIONS

CFR Minutes #962

Date 4/26/02

Chairman CFR C. D. Sutton

George R. Wodicka
Head and Professor
Department of Biomedical Engineering

Supporting Documentation:

Instructor: J.Paul Robinson

Technical Assistant: Jennie Sturgis

Course Objectives:

This module will bring the latest cellular and molecular imaging technologies to the student's attention by allowing them to actually participate in using a confocal microscope. Confocal microscopy is a technology whereby a laser optically sections material and a data set is produced such that the material can be visualized in 3 dimensions. The lecture will give the students a good background in optics, electronics, data collection as well as visualization techniques. In addition, the students will have the opportunity to utilize fluorescence- and confocal- based instrumentation for the collection and analysis of 2D and 3D images of various materials.

Course Content:

Week 1: Light and fluorescence microscopy
Week 2: Fluorescence and transmitted light images with the confocal
Week 3: 3D image collection and processing
Week 4: Reflection imaging and multi-wavelength acquisition
Week 5: Time-lapse and live cell imaging