

From: Registrar Support registrar@iit.edu
Subject: Course Add/Change/Delete Request [#1478]: BME 325 ISSUE=76999 PROJ=17
Date: July 21, 2016 at 2:21 PM
To: jgeorgia@iit.edu

RS

When replying, type your text above this line.

Notification of Incident Change

Incident Number: 76999

Status: Customer Response **Creation Date:** 07/20/2016

Description:

Entered on 07/21/2016 at 2:20:13 PM CDT (GMT-0500) by jgeorgia@iit.edu:
I approve the new course BME 325

Thanks,

JG

John G. Georgiadis, PhD
R. A. Pritzker Professor and Chairman of Biomedical Engineering Dept.
Illinois Institute of Technology
3255 S. Dearborn St., Wishnick Hall 314, Chicago, IL 60616 USA
phone +1 312 567-5790 | fax +1 312 567 5770 | jgeorgia@iit.edu <mailto:jgeorgia@iit.edu>
profile <http://engineering.iit.edu/faculty/john-georgiadis> <<http://engineering.iit.edu/faculty/john-georgiadis>>

> On Jul 21, 2016, at 10:41 AM, Registrar Support <registrar@iit.edu> wrote:
>
> [Duplicate message snipped]

Entered on 07/21/2016 at 10:41:06 AM CDT (GMT-0500) by Aubrey Hall:
Hello.

See below for a course form requiring your approval.

Sincerely,

Aubrey Hall
Associate Registrar
Office of the Registrar

Entered on 07/20/2016 at 5:28:17 PM CDT (GMT-0500) by mogul@iit.edu:
Requestor's Name: David Mogul

Requestor's IIT Email Address: mogul@iit.edu

Type of Request: New Course

Is course for academic credits or for continuing education units (CEUs)?: Credit

Effective Term: Spring 2017

College: AC - Armour College of Engineering

Department: BMED - Biomedical Engineering

Subject Code: BME - Biomedical Engineering

Course Number: 325

Course Title: Bioelectronics Laboratory

Course Level: Undergraduate

Grading Basis: Standard Letter

Schedule Type: Lab

Armour College Engineering Themes:

Biomedical College Engineering Program:
- Health

Contact Hours - Lecture: 0

Contact Hours - Lab: 3

Contact Hours - Other: 0

Total Credits or CEUs: 1

Prerequisites, Corequisites, and
Concurrent Prerequisites (optional):
BME 315 Prerequisite

Additional Registration Restrictions (optional):
Open only to Biomedical Engineering majors.

Course Description:

Practical hands on design, construction and testing of electric and electronic circuitry for biomedical applications. Basic concepts will be presented with emphasis on their relevance to the design of systems that can be used for clinical and basic scientific research.

Course Purpose/Reason for Change:

This course is designed to be taken by junior status BME undergraduates in the Neural Engineering and Medical Imaging tracks. Students in the Cell & Tissue Engineering track will take BME 320 instead.

Upload Syllabus: Bioelectronics Lab Course Outline - BME325 - 2016.doc

CC(s): (permanent) jgeorgia@iit.edu

Contact Information:

Email Address:	mogul@iit.edu	Last Name:	Mogul
First Name:	David	Phone:	3125673873
Fax:	3125675770	Department:	PRI
Building:	WH	Room:	206
IIT Classification:	Faculty/Staff	U-ID:	mogul
Student Level:	Professor	CWID:	20002462

Attachments: Bioelectronics Lab Course Outline - BME325 - 2016.doc

BME 325 - Bioelectronics Lab
Spring, 2016

Time: TBA
Professor: David Mogul, Ph.D.
Office Hours: TBA
Phone: 7-3873 (office)
Email: mogul@iit.edu

Course Description: Practical hands on design, construction and testing of electric and electronic circuitry for biomedical applications. Basic concepts will be presented with emphasis on their relevance to the design of systems that can be used for clinical and basic scientific research.

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|--|----------------|
| 1) Circuits | 4 weeks |
| a) Amplifiers | |
| i) Transistor amplifiers | |
| ii) Operational amplifiers | |
| b) Filters (Passive & Active) | |
| i) Low pass filter | |
| ii) High pass filters | |
| iii) Bandpass | |
| iv) 60Hz Notch filters | |
| c) Optical isolation and electronic safety | |
| d) Bioamplification | |
| i) ECG amplifier | |
| ii) Audio Amplifier | |
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| 2) Motor Control and Other Effectors/Outputs | 3 weeks |
| a) Open-loop control | |
| b) Closed-loop control | |
| c) Speed vs. Position Control | |
| d) Light Control | |
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| 3) Sensors and Input of Data | 3 weeks |
| a) Arduino vs. Gertboard | |
| b) Sensor Input | |
| c) Video & Sound Input | |
|
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| 4) Design of Total Computationally-Controlled Systems | 4 weeks |
| a) Raspberry Pi programming (Python) | |
| b) Multiplexing Input/Output | |
| c) Networking and Interfacing to the Internet | |
| d) Data Reporting, Alarms, | |

Evaluation: Grades will be based on homeworks (20%), lab reports (60%), and final examination (20%).