ELEC/BME 434 – BIOPHOTONICS

Term – Spring 2016 (201601)

Instructor
Wenyan Yu
Phone: 250-885-6386
E-mail: yuwenyan@uvic.ca

Office Hours
Days: Monday
Time: 13:00 – 17:00
Location: ELWA 350

Course Objectives
- Develop skills on applying photonics technologies to biomedical related works.

Learning Outcomes
- Understand photonics concepts as well as devices and basics of biology;
- Be familiar with biophotonics applications such as bioimaging and optical biosensors.

Syllabus
- Fundamentals of light and matter, basics of biology, fundamentals of light-matter interactions, principles of lasers, current laser technology and nonlinear optics, photobiology, bioimaging and optical biosensors, microarray technology for genomics and proteomics, flow cytometry, light-activated therapy, tissue engineering with light, laser tweezers and laser scissors, nanotechnology for biophotonics, biomaterials for photonics.

A-Section(s): A01 / CRN 21154
Days: Monday/Thursday
Time: 11:30 am - 12:50 pm
Location: MacLaurin Building D101

Required Text
Title: Introduction to Biophotonics
Author: Paras N. Prasad
Publisher: Wiley-Interscience
Year: 2003

References:
Title: An Engineering Introduction to Biotechnology
Author: J. Patrick Fitch
Publisher: SPIE Press
Year: 2002
**Title:** Introduction to Biomedical Imaging  
**Author:** Andrew Webb  
**Publisher:** John Wiley & Sons, Inc.  
**Year:** 2003

**Assessment:**
- Assignments: 15%  
  Due Dates: Two weeks after each assignment is handed out.
- Mid-term: 20%  
  Date: Feb. 25, 2016
- Project presentation: 15%
- Project report: 15%
- Final Exam: 35%

**Note:**
The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

**There will be no supplemental examination for this course.**

**Note to Students:**
Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Secretary to set up an appointment.

**Accommodation of Religious Observance**  
[http://web.uvic.ca/calendar/GI/GUPo.html](http://web.uvic.ca/calendar/GI/GUPo.html)

**Policy on Inclusivity and Diversity**  
[http://web.uvic.ca/calendar/GI/GUPo.html](http://web.uvic.ca/calendar/GI/GUPo.html)

**Standards of Professional Behaviour**
You are advised to read the Faculty of Engineering document *Standards for Professional Behaviour*, which contains important information regarding conduct in courses, labs, and in the general use of facilities.  
[https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf](https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf)

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Undergraduate Calendar for the UVic policy on academic integrity.  
[http://web.uvic.ca/calendar/FACS/UnIn/UARE/PoAcI.html](http://web.uvic.ca/calendar/FACS/UnIn/UARE/PoAcI.html)

**Course Lecture Notes**
Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.