Course Syllabus: 2015–2016

BIOM5800/BMG6996 Biomedical Seminar Series

Given the breadth and multidisciplinary nature of biomedical engineering, one of objectives of this seminar series is to expose students to a variety of research areas within biomedical engineering. In addition, the student seminar provides a valuable opportunity to develop skill in the presentation of your scientific work to an audience. Many students when first attending a conference will notice how this skill is sometimes sorely lacking in presentations. When work which may be otherwise important and exciting is presented in a boring, confusing or otherwise inept manner, the audience is turned off and the impact of the scientific message is lost.

During your tenure as a graduate student, you will be a participant in this seminar series, both as an audience member and a presenter. These seminars will provide knowledge in biomedical engineering outside/inside your field and can be a great help in developing the ability and confidence to present scientific talks.

Course Description

BIOM 5800 [0.0 credit] (BMG 6996)

Biomedical Engineering Seminar

This course is in the form of seminars presented by graduate students and other researchers in the area of Biomedical Engineering. To complete this course, a student must attend at least 10 seminars and make one presentation in the context of this seminar series.

***This is a mandatory course for the OCIBME graduate program and all students must register for this course in both fall and winter semesters until completion of all course requirements. A seminar attendance without registration is not counted for the credit.**

Seminar Requirements

(1) Attendance at Seminars:

Students must attend at least 10 seminars (attendance will be taken). Seminars will be announced on the course website. The schedule may vary depending on availability of speakers and it may take multiple terms for a student to attend 10 seminars.

In addition to attending official BIOM5800/BMG6996 seminars, attendance at other biomedical related seminars, workshops and conferences may be counted towards the course attendance requirement. Such activities must be approved in advance by the academic advisor/supervisor or course coordinator. A short report (one page) together with the relevant event program must be submitted to the course coordinator by the student to receive credit. The report form is available from the course webpage *(note that this report is only required for students wishing to receive credit for attending biomedical events outside of BIOM5800/BMG6996)*. In the report, you may outline the talk, describe

specific points in detail which you are impressed with, and add your comments on the talk. Copy and paste of the given abstract is NOT acceptable.

(2) Student Presentation:

Students are expected to make a presentation during the second year of their program, in the fall or winter semester. (Note that the course is not given in the summer semester.) Students can present either their own **thesis research** or **report on an advanced technology** in biomedical engineering (either related to the student's thesis research or not). The content of the presentation should be at a graduate student level.

If you choose to present a report on advanced technology, you should select a topic relevant to biomedical engineering and present a critical analysis of the **state of the art**, perhaps focussing on emerging techniques. You should typically be reviewing 3-5 **up-to-date** (most recent) publications, along with supporting general background reference materials, to create your presentation. **This is not simply a summary of a few articles, your own critical analysis of the field is essential for a successful seminar.**

Some detailed requirements are:

- Presentations will be 20 minutes followed by 5-10 minutes for questions
- Your seminar **topic and abstract must be approved by the academic advisor/supervisor** in advance and must differ from any topic that you have already presented in other courses.
- The abstract submission should include a title and a brief abstract (250-300 words) and, in addition, a preliminary list of references for a report presentation. Abstract submission form is available from the course webpage.
- The abstract must describe concisely what you will discuss and analyze in your presentation.
- The abstract submission form should be submitted via email to the course coordinator with a CC to your supervisor indicating that s/he approves of your topic and abstract. Please see the course webpage for the due date.

Seminar Schedule

- There will be several research seminars and/or student presentations relevant to biomedical engineering.
- See the course website for seminar announcements.

Course Coordinator

Fall 2015: Prof. Andy Adler, Email: adler@sce.carleton.ca, office: Canal Bldg 6204

Winter 2016: Prof. James Green, Email: jrgreen@sce.carleton.ca, office: Canal Bldg 6203

Course Webpage

http://www.ocibme.ca/seminar.php

Components of a Good Seminar

Introduction

Two or three minutes of lead-in explaining the nature of the problem that you are interested in and its importance should be used to introduce the audience to your project. Your introduction should clarify: 1) what is the problem? 2) what is the goal of this research? 3) who benefits and how?

"Road Map"

For this audience it is extremely useful at the end of the introduction to offer the audience a "road map" i.e. a description of what is to be accomplished in the seminar. This slide can be referred to throughout the talk, and helps the listener follow the talk by giving it a well-defined direction.

Contents

Remember that the OCIBME is a mixed group of researchers who specialize in a variety of disciplines. Give enough of a framework to allow the uninitiated to follow your talk. Avoid jargon. A brief definition of terms with which part of your audience may not be familiar is often very helpful. At some point in your talk you're bound to leave some people behind but you should aim to minimize this occurrence. Present a critical analysis of the state of the art for the biomedical engineering problem that you have defined.

Conclusion

Try to draw some conclusions from your analysis. Summarize these and a list of still unanswered questions on one or two brief slides. Indicate the direction of future work in your chosen area. Let the audience know when your talk is finished. Don't just stop talking and stand there. Invite questions, simply say "Thank you", or use some more imaginative technique to indicate that it's over.

Question Period

After your talk there will be a question period. The questions from faculty and fellow students may relate to particulars of your talk, or they may be of a more general nature. Answer them to the best of your knowledge stating clearly when you are venturing an opinion. There will often be questions to which you do not have the answer or to which there is no answer. When these come up you are not necessarily expected to have an answer and will do best by being honest and careful in your reply. Some of the questions may be surprisingly simple. Treat them at face value as the listener may not be familiar with your area of endeavour.

General Suggestions

Use of Audio-Visual Materials

Legibility is of great importance, especially in a large room. The presentation room will be equipped with a digital projector and computer capable of displaying MS PowerPoint and Adobe PDF files. A chalk board, white board, and overhead projector may also be available

should you require it. Try not to go back and forth between the different projection media too often because it tends to slow down the flow of the talk and distracts the audience.

Label axes on all graphs. Don't try to crowd too much information on a table or graph or it will be lost or confuse the viewer. Use colour to distinguish curves from one another. If scales on axes are broken make this obvious.

Timing

Seminars are 20 minutes (maximum) and there will be 5- 10 minutes left at the end for questions. Presentations will **not** be allowed to **exceed** 20 minutes. Practice your talk with fellow students including slide changes and get the timing right.

Style of Presentation

Your objective should be to present a smoothly flowing seminar without going to the extreme of sounding like a "used car salesman". Learn your talk so that you don't have to read it. A helpful technique is to use a card with a list of figures or slides, a brief outline or the figures themselves to guide you through the talk. Associate a set of ideas with each illustration and they will come to mind as it is projected on the screen. Cohesive organization of your content is most important for the way in which your talk comes across.

In your practice sessions get a friend to describe any distracting mannerisms in your style so that you can consciously attempt to avoid them. Some classic examples are the jingling of keys in pockets and random gesticulations with pointers as well as "ums", "uhs", etc.

Speak clearly.

You should attempt to give a talk in the style that you would use at a conference rather than for a group seminar while keeping in mind the previous comments about the mixed scientific audience. It may help to assume that your audience is a collection of intelligent, but semi-ignorant people, who are anxious to learn about your work.

Evaluation

The OCIBME graduate student seminar series is meant to function as a valuable tool for you to build your seminar skills. It is an opportunity to present and listen to a broad range of biomedical engineering topics in a relaxed atmosphere. Written feedback will be collected from all students and faculty in attendance and given to the presenter. Note that the course coordinator (and probably also your advisor and peers) is happy to offer any advice before the presentation.

This seminar guide has been adapted from the Ottawa-Carleton Institute for Physics. It is hoped that it will be of use to you. If there are any comments or constructive suggestions they will be enthusiastically welcomed and incorporated in future update