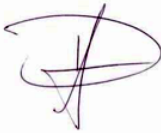


September 22, 2022

Dear Academic Standards Committee:

Please see below the 1-year follow up report for the initiatives that were outlined in the Biomedical Engineering PPR and as requested by Academic Standards.

If you require anything further please don't hesitate to contact me.



Dimitri Androutsos
Department Chair

<p>Priority Recommendation #1: <i>Increase the number of 4th year professional electives available to students</i></p>
<p>Rationale: <i>There is an urgent need to introduce more technical electives in the 7th and 8th semester to give students more choice. Elective courses in specialized areas of bio-robotics, advanced medical instrumentation, etc. would be valuable additions.</i></p>
<p>Actions:</p> <ul style="list-style-type: none"> • <i>Identify advanced topics that are lacking in the curriculum;</i> • <i>Design courses around the advanced topics identified above</i>
<p>Timeline:</p> <ul style="list-style-type: none"> • <i>2018/19: identify topics that can be introduced through new 4th year professional electives</i> • <i>2018-2020: design and integrate into curriculum 4 courses over 2 years</i>
<p>Responsibility for:</p> <p>a) leading initiative: <i>Department Chair, Program Director, Stream</i></p> <p>b) approving recommendation, providing resources, and overall monitoring: <i>Department Chair, Dean</i></p>
<p>Status for 1-year Follow-Up Report: <i>Three new courses have been added to the 4th year, namely:</i> <i>BME 714 – Medical Robotics</i> <i>BME 803 – Cardiovascular Biomechanics</i> <i>CEN 810 – Selected Topics in Engineering</i> <i>Biomedical Streams continue to discuss the creation of more 4th year courses in the coming years.</i></p>

Priority Recommendation #2:

Improve TA support to undergraduate courses with overall increased stringency on the requirements for selection and also with adequate training and preparation

Rationale:

Notwithstanding our efforts to select appropriate graduate students as teaching assistants in our labs, our recent surveys have indicated that there are courses where the TAs are not well prepared to assist students.

Actions:

- *identify key courses that have a large number of TAs;*
- *increase preparation/training hours for TAs in those courses;*
- *require TAs to perform and complete all labs that undergraduate students will be doing;*
- *introduce and hire Lab Leads to roam labs and provide extra support and supervision.*

Timeline:

2018/19 academic year

Responsibility for

a) leading initiative: *Department Chair*

b) approving recommendation, providing resources, and overall monitoring: *Department Chair, Dean*

Status for 1-year Follow-Up Report:

- Lab Leads (Head TAs) have been hired for core courses. These Head TAs help to train new TAs on how to supervise labs and help students on essential lab equipment usage and core lab knowledge/skills.
- All TAs, in particular new hires, *must* perform all labs in the course they are assigned to ensure they are familiar with the material
- Additional hours (4 total) have been assigned to TAs that are assigned to courses that they have never TA-ed before so that they can spend more time getting trained on the lab content

Priority Recommendation 3:

Integrate opportunities for students to improve and build on soft skills (e.g., leadership, oral presentation, professionalism)

Rationale:

Our student survey identified skill areas that are not well addressed. Soft skills are not formally part of the engineering curriculum but they are essential skills for a professional engineering in industry.

Actions:

- *identify key core courses where students can present orally*
- *provide leadership opportunities to senior graduate students by creating a program that will allow them to mentor students in early years*
- *work with career centre to have them visit classes and hold seminars to relay to students the aspects of professionalism that are essential and to help them cultivate them*

Timeline:

2018/19:

- *investigate courses that can easily have oral presentations included in labs and/or group work*
- *invite career centre to plan seminars on professionalism*

2019/20

- *formally integrate into courses*

Responsibility for

a) leading initiative: *Department Chair, Program Director, Stream*

b) approving recommendation, providing resources, and overall monitoring: *Department Chair, Dean*

Status for 1-year Follow-Up Report:

- increased the number of oral presentations in 4th year EDP
- new 4th year course in Medical Robotics includes a group project
- new 3rd year CEN 810 is a large group project that includes interaction with an industry partner where professionalism and oral presentation will be paramount
- this initiative continues to be discussed and is an ongoing topic, especially in how more courses can integrate these soft skills.

Priority Recommendation #4:

Increase the number of co-op internship jobs available to students in BME

Rationale:

Our internship program is proving to be very popular. In 2018/19 we will be having 80 students on internship, which is a record. Unfortunately, only 4 of these positions were in Biomedical Engineering.

Actions:

- *Identify potential employers in GTA and Southern Ontario*
- *Create 1-page prospectus/flyer that provides quick info on our co-op internship and benefits to the employer*
- *Plan site-visits with potential employers to discuss their participation*

Timeline:

Fall 2018

- *create prospectus/flyer;*
- *identify possible new employers;*
- *send out email and flyer*
- *follow up and initiate discussion;*

Winter 2019-

- *continue constant contact with existing employers and continue identifying and inviting new employers.*

Responsibility for

a) leading initiative: *Department Chair, FEAS*

b) approving recommendation, providing resources, and overall monitoring: *Department Chair, Dean*

Status for 1-year Follow-Up Report:

- the FEAS Co-Op office has been created since the PPR was submitted
- there has been a strong increase in the number of jobs for BME and the number of BME students that have accepted co-op jobs
- ~75% of BME students apply and are qualified to take part in co-op
- In 2017/18 we had 8 BME students on paid co-op. In 2022/23 we currently have 39.
That is a >400% increase.
- Nonetheless, this continues to be a priority of the co-op office and the DEPT of ECBE