



Office of Graduate Studies and Postdoctoral Fellows

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www.sfu.ca/grad**MEMORANDUM**

ATTENTION Senate  
FROM Wade Parkhouse, Chair of Senate  
Graduate Studies Committee (SGSC)  
RE: Faculty of Applied Science

DATE March 3 2015  
No. GS2015.12

A handwritten signature in cursive script that reads 'Wade Parkhouse'.

**For information:**

Acting under delegated authority at its meeting of March 2, 2015, SGSC approved the following program change effective Fall 2015:

School of Engineering Science  
Program change: Concurrent BAsc/MAsc



FACULTY OF APPLIED SCIENCES

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MEMORANDUM

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ATTENTION Dr. Wade Parkhouse  
Dean, Graduate Studies

DATE February 11, 2015

FROM Dr. Uwe Glässer  
Faculty of Applied Sciences, Graduate  
Studies Committee

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RE: Concurrent Enrollment to a BAsC/MASc program in Engineering Science

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The Faculty of Applied Sciences Graduate Studies Committee has unanimously approved by electronic vote on February 11, 2015 the Concurrent Enrollment to a BAsC/MASc program in Engineering Science proposed by the School of Engineering Science.

The proposed program is meant to help attract and maintain exceptional undergraduate students and shorten their time to graduation. This initiative also offers an important strategic element in the increasing competition with other institutions.

Would you please place this proposal on the agenda for the next SGSC meeting?

cc: Dr. Martin Ester, Director, School of Computing Science  
Dr. Farid Golnaraghi, Director, School of Mechatronic Systems Engineering  
Dr. Kamal Gupta, Director, School of Engineering Science

enclosures

**Proposal for Concurrent Enrollment to a BAsc/MAsc program in Engineering Science  
(Also known as Concurrent Bachelor's-Master's Program)**

General admission requirements and guidelines for concurrent enrollment can be found here:  
<http://www.sfu.ca/dean-gradstudies/future/academicprograms/ConcurrentAdmission.html>

**1. Faculty/Department/School**

Faculty of Applied Sciences / School of Engineering Science

**2. Degree programs (undergraduate and graduate)**

Bachelor of Applied Science (BAsc) / Master of Applied Science (MAsc)

**3. Proposed date of implementation**

Fall 2015

**4. Rationale**

The proposed BAsc/MAsc program is meant to encourage top undergraduate students in the School of Engineering Science to pursue the MAsc degree at SFU. The program aims to address several challenges faced by the School:

- Our top undergraduates are in high demand by both industry and prominent graduate engineering schools in Canada and USA, which means that most of them tend to leave SFU after graduating with a BAsc degree, thus depriving us of their talent at the graduate level.
- Our graduate program is disproportionately populated by international students who are not eligible for many external awards, such as tri-council awards.
- International graduate admissions are inherently challenging and risky, requiring deep knowledge of the engineering education in the applicant's country of origin and the institution where the applicant has completed the Bachelor's degree. This expertise is often not available within the School.

It is expected that the ability to complete a MAsc degree over a shorter period of time compared to the conventional path will serve as an incentive to the top undergraduates to pursue graduate education in the School of Engineering Science. Further, the availability of a fast-track option to obtain both BAsc and MAsc degrees is expected to have a positive effect on the recruitment of top high-school students into the undergraduate Engineering Science program at SFU.

## **5. Projected enrollment/Student Demand**

In the last few years, the number of students in the BAsC program with at least 90 credits and CGPA of at least 3.67 was as follows:

Fall 2014 - 25

Fall 2013 - 19

Fall 2012 - 13

These are the upper limits of what we can expect to be student demand for concurrent BAsC/MAsC. Taking into account additional co-op requirements and the necessity to find a Senior Supervisor with RA support (please see items 7 and 8 below), the projected enrollment is in the range of 5-10 students per year.

## **6. Advising structure for students**

Each student in the concurrent BAsC/MAsC program will have a Senior Supervisor who will:

- guide them in selecting courses,
- supervise their research, and
- provide RA support as described in item 7 below.

## **7. Capacity to provide financial and supervisory support to students, once their bachelor's degree is complete, based on the estimate number of students being concurrently admitted to a bachelor's and master's programs.**

Students will only be admitted into the concurrent BAsC/MAsC program if they can find a suitable MAsC Senior Supervisor who is willing to provide Research Assistantship (RA) of at least \$6,000 per year once BAsC degree is completed, as per ENSC Graduate Student Funding Policy:

[http://www.sfu.ca/content/dam/sfu/engineering/Graduate/ENSC\\_Grad\\_Student\\_Funding\\_Policy.pdf](http://www.sfu.ca/content/dam/sfu/engineering/Graduate/ENSC_Grad_Student_Funding_Policy.pdf)

Once admitted to the concurrent BAsC/MAsC program, the student is expected to seek advice from the Senior Supervisor on the selection of courses and the choice of the research topic. Supervisory Committee must be formed no later than the first semester after the completion of all BAsC requirements, but can be formed even at the earlier stages of the concurrent program. Once the BAsC requirements are completed, the student becomes eligible for additional financial support from the School in the form of GF or TA, in the amount of \$4,000 per year (minimum), as per the funding policy mentioned above.

## **8. Admission requirements in addition to the minimum SFU requirements**

In addition to the minimum SFU requirements (at least 90 credits of undergraduate course work with a CGPA of at least 3.67/4.33), students will be required to:

- have completed at least one co-op term,
- have completed at least 24 credits of upper-level ESD courses while resident at SFU, and
- have found a Senior Supervisor who will provide guidance and RA funding as described in item 7.

**9. Specific time-lines (e.g. when undergraduates may apply; when each of the milestones must be accomplished; expected completion)**

BASc students who meet the SFU requirements and the additional requirements listed in item 8 will be encouraged to apply. This will normally take place towards the end of the third year or during the fourth year in their BASc curriculum.

Students need to find a suitable Senior Supervisor (item 7 above) in order to be admitted into the concurrent program. The Supervisory Committee will normally be formed no later than the first semester upon completion of all BASc requirements.

Since the MASc program is thesis-only, students are expected to complete it within 18 months after completing all BASc requirements, in accordance with SFU regulations on concurrent Bachelor's-Master's programs.

**10. Description of any proposed changes to existing programs (e.g. undergraduate courses that cannot be substituted by graduate courses; graduate courses that cannot be used towards the undergraduate program)**

Each undergraduate option in the School of Engineering Science (Biomedical Engineering, Computer Engineering, Electronics Engineering, Engineering Physics, and Systems Engineering) has its own list of pre-approved Engineering Science and Design (ESD) electives. The process of maintaining the various lists of pre-approved electives is ongoing. Our Undergraduate Curriculum Committee (UCC) looks over these lists, making sure they are up to date. When a new relevant course gets developed, in our School or in another department, the lists get updated accordingly. The concurrent BASc/MASc would not add anything new to this process from a procedural point of view. The UCC will consider graduate courses as potential elective courses, in the same way they have considered other potential elective courses up to now. A given grad course may meet the criteria for one option and not the others - in that case, it would get added to the electives list for that option, but not the others. The same is true for undergraduate elective courses. In summary, the process of maintaining electives list is ongoing - the UCC will simply add graduate courses to this ongoing process and treat them in the same way as undergraduate electives have been treated so far.

Graduate courses that can be used as ESD electives for the various options in the ENSC undergraduate program will be added to the current list of approved ESD electives for each option. For the current list of approved ESD electives, see the following links.

**Biomedical Engineering**

Pre-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/biomedical/pre2013curriculum.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/biomedical/pre2013curriculum.html)

Post-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/biomedical/curriculum-revised.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/biomedical/curriculum-revised.html)

## **Computer Engineering**

Pre-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/computer/curriculum.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/computer/curriculum.html)

Post-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/computer/curriculum-revised.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/computer/curriculum-revised.html)

## **Electronics Engineering**

Pre-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/electronics/curriculum.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/electronics/curriculum.html)

Post-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/electronics/curriculum-revised.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/electronics/curriculum-revised.html)

## **Engineering Physics**

Pre-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/physics/curriculum.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/physics/curriculum.html)

Post-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/physics/curriculum-revised.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/physics/curriculum-revised.html)

## **Systems Engineering**

Pre-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/systems/curriculum.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/systems/curriculum.html)

Post-Fall 2013

[http://www.sfu.ca/engineering/undergraduate\\_students/academic-programs/systems/curriculum-revised.html](http://www.sfu.ca/engineering/undergraduate_students/academic-programs/systems/curriculum-revised.html)

## Appendix A: Proposed Calendar Text

The following calendar text will be added:

1. in the "Program Requirements" section at the end of "Engineering Science Elective Courses" for each option (major and honours) in the undergraduate program, and
2. at the end of "Course Requirements" section for the MASc program.

Calendar Text:

NOTE: SFU students enrolled concurrently in a bachelor's degree program and a master's degree program within School of Engineering Science, Faculty of Applied Science, may apply a maximum of 10 graduate course units, taken while completing the bachelor's degree, towards the upper division undergraduate electives of the bachelor's program and the requirements of the master's degree. For more information, please contact the Engineering Science Graduate Program Committee Chair.

*The link in the calendar entry above can be replaced with a link to a departmental webpage that provides additional information regarding the concurrent admission process for your academic unit. This proposal and calendar entry needs to be submitted to SGSC for approval. Once approved the calendar entry needs to be submitted to SCUS (Senate Committee on Undergraduate Studies) for information.*

*If there are any additional requirements, please specify those changes to the graduate and/or undergraduate calendar entry using the table below and indicate which calendar entry these changes apply to. NOTE: If there are any specific changes to the undergraduate calendar entry, in addition to the generic entry above, those changes will need to be submitted to SCUS for approval before being submitted to SGSC.*

### Calendar Entry Change for: Engineering Science - Master of Applied Science

FROM	TO
<p>Admission Requirements</p> <p>The normal admission requirement is a bachelor's degree in electrical engineering, computer engineering, engineering science or a related area, with a 3.0 cumulative grade point average (CGPA) (B grade) from a recognized university, or equivalent.</p>	<p>Admission Requirements</p> <p>The normal admission requirement is a bachelor's degree in electrical engineering, computer engineering, engineering science or a related area, with a 3.0 cumulative grade point average (CGPA) (B grade) from a recognized university, or equivalent.</p> <p><u>Students currently enrolled in the BASc program at SFU may be eligible for the concurrent admission to the BASc/MASc program, provided their CGPA is at least 3.67/4.33 after completing at least 90 credits. Contact the Graduate Program Chair for further details.</u></p>