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www.sfu.ca/vpacademic**MEMORANDUM**

ATTENTION	Senate	DATE	February 7, 2014
FROM	Gordon Myers, Chair Senate Committee on Undergraduate Studies	PAGES	1/1
RE:	Faculty of Applied Sciences (SCUS 14-07)		

For information:

Acting under delegated authority at its meeting of February 6, 2014 SCUS approved the following curriculum revisions.

1. School of Mechatronics Systems Engineering (SCUS 14-07a)**(i) New Course Proposals:**

- MSE 403-1, Technology Entrepreneurship (I) effective Spring 2015
- MSE 404-1, Technology Entrepreneurship (II) effective Summer 2015
- MSE 111-3, Mechatronics for non-Engineers effective Summer 2015

2. School of Computing Science (SCUS 14-07b) effective Fall 2014**(i) New Course Proposals:**

- CMPT 127-3, Computing Laboratory

(ii) Prerequisite change to CMPT 125



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MEMORANDUM

ATTENTION	Senate Committee on Undergraduate Studies	DATE	January 27, 2014
FROM	Ed Park, Associate Dean	PAGES	
RE:	New course proposals for CMPT and MSE		

The School of Mechatronic Systems Engineering (MSE) would like to add the following new courses to support the redesign of the Ken Spencer Technology Entrepreneurship @ SFU program for both MSE and BUS students:

- MSE 403-1: Technology Entrepreneurship I
- MSE 404-1: Technology Entrepreneurship II
- MSE 111-3: Mechatronics for Non-engineers

The first two courses are intended to provide the curriculum bridge between MSE and BUS students within the program. The third course is intended to provide BUS in the program an overview and working knowledge of key mechatronic systems concepts and tools, allowing for effective collaboration in their joint final projects.

The School of Computing Science would like to add a new course, CMPT 127, and recommend a change to an existing course, CMPT 125, in terms of its pre-requisite:

- CMPT 125-3: Computing Science and Programming II
- CMPT 127-3: Computing Laboratory

CMPT 127 is a new course that provides comprehensive labs for expanded hands-on teaching of programming and the co-requisite pairing of the 125 lecture-based class and 127 lab-based class will give all CS students a solid grounding in the theory and practice of computational problems.

Please find attached in this package the course proposals and outlines for the above courses.

Thank you,

Edward Park
Associate Dean



COURSE SUBJECT/NUMBER

SCUS 14-07a

COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

MSE 403-1: Technology Entrepreneurship (I)

(To be co-listed and co-taught as BUS 404-1: Technology Entrepreneurship (I))

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

TechnologyEntrepreneurship1

CAMPUS where course will be taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

Technology entrepreneurship project facilitation for Business and Mechatronic Systems Engineering student teams in the Technology Entrepreneurship @ SFU program. Entrepreneurship seminars, workshops and learning labs. Presentation skills to attract financing for early stage entrepreneurial initiatives. *STUDENTS WITH CREDIT FOR BUS 404 CANNOT TAKE MSE 403 FOR FUTURE CREDIT.*

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

The library has sufficient material in this area.

Library report: status

RATIONALE FOR INTRODUCTION OF THIS COURSE

This course is intended to facilitate the interactions between MSE and BUS students involved in the Technology Entrepreneurship @ SFU initiative and working on coordinated final year capstone projects. External and internal seminars and workshops will be incorporated along with capstone project supervision and mentorship. Students will be guided towards a series of panel presentations in which they compete for prototyping funds to advance their projects.

SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective term and year course would first be offered and planned frequency of offering thereafter:

This course would first be offered in Spring 2015 and annually thereafter.

Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate: 20





CREDITS

Indicate number of credits (units): 1

Indicate number of hours for: Lecture 1 Seminar 1 Tutorial Lab Other

FACULTY Which of your present CFL faculty have the expertise to offer this course?

Kevin Oldknow, Farid Golnaraghi

(BUS counterpart: Sarah Lubik)

WQB DESIGNATION (attach approval from Curriculum Office)

PREREQUISITE

Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses?
If so, this should be noted in the prerequisite.

COREQUISITE

MSE 410-3

STUDENT LEARNING OUTCOMES

Upon satisfactory completion of the course students will be able to:

- Work collaboratively and effectively in multi-disciplinary entrepreneurial teams including both technical and business focussed resources.
- Understand and articulate the challenges and approaches involve in attracting financing for early stage technology based entrepreneurial initiatives.
- Construct and deliver an appropriate and effective presentation aimed at communicating the technical and business merits of an entrepreneurial initiative, in search of early stage (prototype) funding.

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Articulation agreement reviewed? YES NO Not applicable

Exam required: YES NO

Criminal Record Check required: YES NO

APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

- 1 Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.

Chair, Department/School

Date

Chair, Faculty Curriculum Committee

Date

- 2 Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.

Dean or designate

Date

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

Date _____

Date _____

- 3 SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

COURSE APPROVED BY SCUS (Chair of SCUS):

Date _____



COURSE SUBJECT/NUMBER

COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

MSE 404-1: Technology Entrepreneurship (II)

(To be co-listed and co-taught as BUS 405-1: Technology Entrepreneurship (II))

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

TechnologyEntrepreneurship2

CAMPUS where course will be taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

Technology entrepreneurship project facilitation for Business and Mechatronic Systems Engineering student teams in the Technology Entrepreneurship @ SFU program. Entrepreneurship seminars, workshops and learning labs. Presentation skills to attract financing for development and growth stage entrepreneurial initiatives. *STUDENTS WITH CREDIT FOR BUS 405 CANNOT TAKE MSE 404 FOR FURTHER CREDIT.*

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

The library has sufficient material in this area.

Library report status

RATIONALE FOR INTRODUCTION OF THIS COURSE

This course is intended to facilitate the interactions between MSE and BUS students involved in the Technology Entrepreneurship @ SFU initiative and working on coordinated final year capstone projects. External and internal seminars and workshops will be incorporated along with capstone project supervision and mentorship. Students will be guided towards final project presentations in which they compete for funds to support acceleration / incubation.

SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective term and year course would first be offered and planned frequency of offering thereafter:

This course would first be offered in Summer 2015 and annually thereafter.

Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate: 20





CREDITS

Indicate number of credits (units): 1

Indicate number of hours for: Lecture 1 Seminar 1 Tutorial Lab Other

FACULTY Which of your present CFL faculty have the expertise to offer this course?

Kevin Oldknow, Farid Golnaraghi

(BUS counterpart: Sarah Lubik)

WQB DESIGNATION (attach approval from Curriculum Office)

PREREQUISITE

Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses?
If so, this should be **noted in the prerequisite.**

COREQUISITE

MSE 411-3

STUDENT LEARNING OUTCOMES

Upon satisfactory completion of the course students will be able to:

- Work collaboratively and effectively in multi-disciplinary entrepreneurial teams including both technical and business focussed resources.
- Incorporate market based feedback into project execution and prototype development.
- Construct and deliver an appropriate and effective presentation aimed at communicating the technical and business merits of an entrepreneurial initiative, in search of development and growth phase funding.

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Articulation agreement reviewed? YES NO Not applicable

Exam required: YES NO

Criminal Record Check required: YES NO

APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

1 Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.

Chair, Department/School

Date

Chair, Faculty Curriculum Committee

Date

2 Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.

Dean or designate

Date

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

Date _____

Date _____

3 SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

COURSE APPROVED BY SCUS (Chair of SCUS):

Date _____



COURSE SUBJECT/NUMBER

COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

MSE 111-3: Mechatronics for non-Engineers

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

MechatronicsForNonEngnr

CAMPUS where course will be taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

Introductory Project course designed to provide non-engineering students with a first exposure to mechatronic systems engineering concepts and the challenges of project organization. Students are responsible for designing and constructing a mechanical robot optimized to solve a particular chosen task. The engineering challenges of the project are expected to focus on mechanical design, control algorithm design and implementation.

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

The library has sufficient material in this area.

Library report status

RATIONALE FOR INTRODUCTION OF THIS COURSE

This course is intended to provide an overview and working knowledge of key mechatronic systems engineering concepts and technologies for non-engineering students, stimulated through introductory level project work. Primary objectives include development of a shared language and knowledge base between engineering and non-engineering students, allowing for effective collaboration in interdisciplinary projects.

SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

This course would first be offered in Summer 2015 and annually thereafter.

Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate: 20



CREDITS

Indicate number of credits (units): **3**

Indicate number of hours for: Lecture **3** Seminar **3** Tutorial Lab Other

FACULTY Which of your present CFL faculty have the expertise to offer this course?

Amr Marzouk

WQB DESIGNATION (attach approval from Curriculum Office)

PREREQUISITE

Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses?
If so, this should be **noted in the prerequisite.**

MSE students cannot earn credit for this course in lieu of or in addition to MSE 110.

COREQUISITE

STUDENT LEARNING OUTCOMES

Upon satisfactory completion of the course students will be able to:

- > Build a multidisciplinary knowledge base and apply it in an innovative way.
- > Practice problem identification, formulation and solving.
- > Investigate new project challenges and generate multiple design iterations through analysis and data collection.
- > Developing products according to a product development life-cycle with specific target objectives and constraints.
- > Use multiple hardware and software tools as means of aid in the design process.
- > Work effectively as a team member as part of a larger interdisciplinary group.

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

OTHER IMPLICATIONS

Articulation agreement reviewed? YES NO Not applicable
 Exam required: YES NO
 Criminal Record Check required: YES NO

APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

1 **Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.**

Chair, Department/School Date

Chair, Faculty Curriculum Committee Date

2 **Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.**

Dean or designate Date

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

Date _____

Date _____

3 **SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.**

COURSE APPROVED BY SCUS (Chair of SCUS):

Date _____


COURSE SUBJECT/NUMBER CMPT 127

COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Computing Laboratory

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Computing Laboratory

CAMPUS where course will be taught: Burnaby Surrey Vancouver Great Northern Way Off campus

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

Builds on CMPT 120 to give a hands-on introduction to programming in C and C++, the basics of program design, essential algorithms and data structures. Guided labs teach the standard tools and students exploit these ideas to create software that works. To be taken in parallel with CMPT 125.

REPEAT FOR CREDIT NO YES How many times? Within a term? YES NO

LIBRARY RESOURCES

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

none required

Library report status

RATIONALE FOR INTRODUCTION OF THIS COURSE

Computing Science enrolments have grown and the student population has changed. Our current curriculum does not give students enough detailed instruction and practice in the basics of programming and CS. High school preparation in CS is very inconsistent. Thus our more advanced classes are slowed and success rates lowered as students struggle with inadequate preparation. This class focuses on providing the students with the knowledge and practical skills to get the most out of the rest of the curriculum. Following standard practice in the Sciences, we will use hands-on labs based on tool use, problem solving and repetition.

This class is designed to be taken as a co-requisite with the lecture-based class CMPT 125.adequate

SCHEDULING AND ENROLLMENT INFORMATION

 Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:

Fall 2014. Offered at least every Fall and Spring thereafter. A section will be limited to 192 students. Multiple sections may be offered.

 Will this be a required or elective course in the curriculum? Required Elective

What is the probable enrollment when offered? Estimate: Fall 2014.



CREDITS

Indicate number of credits (units): **3**

Indicate number of hours for:	Lecture	Seminar	Tutorial	Lab	Other
				3	additional 5 hours self-guided lab with TA support

FACULTY Which of your present CFL faculty have the expertise to offer this course?
All CMPT faculty could teach this intro class.

Richard Vaughan and Brad Bart have developed the class and are teaching a pilot version in Spring 2014. The pilot is overenrolled. Vaughan will be the ongoing course champion.

WQB DESIGNATION (attach approval from Curriculum Office).
none required

PREREQUISITE

Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses? If so, this should be **noted in the prerequisite**.

CMPT 120 or CMPT 128 or CMPT 130

COREQUISITE

CMPT 125

STUDENT LEARNING OUTCOMES

Upon satisfactory completion of the course students will be able to:
See attachment.

FEES

Are there any proposed student fees associated with this course other than tuition fees? YES NO



RESOURCES

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc: The CMPT Instructional Labs (CSIL) have sufficient space and equipment.

OTHER IMPLICATIONS

Articulation agreement reviewed? YES NO Not applicable
Exam required: YES NO
Criminal Record Check required: YES NO

APPROVALS: APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

1 Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.

M. Ester Jan 23, 2014
Chair, Department/School Date

[Signature] Jan. 27, 2014
Chair, Faculty Curriculum Committee Date

2 Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.

[Signature] Jan. 27, 2014
Dean or designate Date

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

CMPT 127 will be required for all CS majors, including Joint Major programs. We have Joint Majors (or similar joint programs) with MATH, STAT, MBB, BUS, LING, GEOG, COGS.

All these units have been consulted about this change, and calendar wording changes for each program are being submitted alongside this proposal. These

CMPT 126 remains as an option for all SFU students who want or require a second CS/programming class without the CMPT 127 co-requisite, including MATH and STAT students.

Other Faculties' approval indicates that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

____ Date _____
____ Date _____

3 SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

COURSE APPROVED BY SCUS (Chair of SCUS):

____ Date _____

