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|                  |                                                                     |              |                 |
|------------------|---------------------------------------------------------------------|--------------|-----------------|
| <b>ATTENTION</b> | Senate                                                              | <b>DATE</b>  | October 3, 2014 |
| <b>FROM</b>      | Gordon Myers, Chair<br>Senate Committee on<br>Undergraduate Studies | <b>PAGES</b> | 1/1             |
| <b>RE:</b>       | Faculty of Applied Sciences (SCUS 14-37)                            |              |                 |

A handwritten signature in blue ink, appearing to read 'Gordon Myers', written over a horizontal line.

**For information:**

Acting under delegated authority at its meeting of October 2, 2014 SCUS approved the following curriculum revisions.

1. School of Engineering Science

- (i) New Course Proposal: ENSC 405W-3, Project Documentation, User Interface Design, and Group Dynamics
- (ii) Revision to external transfer language
- (iii) Prerequisite change to ENSC 180, 225, 320, 425, 429, 450
- (iv) Changes to credit, description and prerequisite for ENSC 440
- (v) Changes to title, description and prerequisite for ENSC 472



## FACULTY OF APPLIED SCIENCES

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**MEMORANDUM**

|                  |                                           |              |               |
|------------------|-------------------------------------------|--------------|---------------|
| <b>ATTENTION</b> | Senate Committee on Undergraduate Studies | <b>DATE</b>  | Sept 22, 2014 |
| <b>FROM</b>      | Ed Park, Associate Dean                   | <b>PAGES</b> |               |
| <b>RE:</b>       | Curriculum Changes                        |              |               |

The following changes have been approved by the FAS Undergraduate Curriculum Committee and are appended here for approval by SCUS and recommendation to Senate.

## 1.) School of Engineering Science

## a. New Course Proposals

## i. ENSC 405W

1P GRADES

## b. Course Changes

## i. ENSC 180

## ii. ENSC 225

## iii. ENSC 320

## iv. ENSC 425

## v. ENSC 429

## vi. ENSC 440

## vii. ENSC 450

## viii. ENSC 472

## c. Calendar Changes

## i. Revisions to external transfer language

## ii. Revisions to individual ENSC options:

- Engineering Science Major, Computer Engineering Option
- Engineering Science Major, Electronics Engineering Option
- Engineering Science Major, Systems Option
- Engineering Science Honours, Biomedical Engineering Option
- Engineering Science Honours, Computer Engineering Option
- Engineering Science Honours, Electronics Engineering Option
- Engineering Science Honours, Engineering Physics Option
- Engineering Science Honours, Systems Option

Thank you,

A handwritten signature in black ink, appearing to read "Edward Park", written over a horizontal line.

**Edward Park  
Associate Dean**

**(EP/mt)**

# **Engineering Science Curriculum Revision: Year 3 and 4**

## **Faculty of Applied Sciences Curriculum Committee**

**Lesley Shannon and Ed Park**

**September 2014**

The School of Engineering Science proposes a new third and fourth year curriculum for all the engineering science options. This will complete the curriculum revision of our program. It includes the removal of some previously required courses (e.g. ENSC 305W, ENSC 330), the addition of some new course sequences (e.g. ENSC 405W-ENSC 440) and the renumbering of existing courses to correctly reflect their course level (ENSC 201, 224, 230 and 281). Finally, each option has now defined a unique set of mandatory core courses to clearly differentiate them and we have indicated that any course substitutions from the specified course requirements for each option must be pre-approved to meet graduation requirements.

1. New course proposals:
  - a) ENSC 405W-3 Project Documentation, User Interface Design, and Group Dynamics
2. The new course proposal and outline are attached, along with the WQB memo.
3. Course prerequisite changes: ENSC 180, ENSC 224/324, ENSC 225, ENSC 230/386, ENSC 281/385, ENSC 320, ENSC 327, ENSC 328, ENSC 372/475, ENSC 374/477, ENSC 411, ENSC 425, ENSC 429, ENSC 440, ENSC 472, ENSC 474,
4. Course title change: ENSC 472
5. Course credit change: ENSC 440
6. Course Description Change: ENSC 201/410, ENSC 440, ENSC 472
7. Course Re-Numbering: ENSC 201/410, ENSC 224/324, ENSC 230/386, ENSC 281/385, ENSC 372/475, ENSC 374/477,
8. Revisions to all ENSC option calendars
9. Revisions to each of the ENSC options as shown below.
  - a) Changes to the Engineering Science Major, Computer Engineering Option
  - b) Changes to the Engineering Science Major, Electronics Engineering Option
  - c) Changes to the Engineering Science Major, Systems Option
  - d) Changes to Engineering Science Honours, Biomedical Engineering Option
  - e) Changes to Engineering Science Honours, Computer Engineering Option
  - f) Changes to Engineering Science Honours, Electronics Engineering Option
  - g) Changes to Engineering Science Honours, Engineering Physics Option
  - h) Changes to Engineering Science Honours, Systems Option



**COURSE SUBJECT/NUMBER** ENSC 405W

**COURSE TITLE**

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

Project Documentation, User Interface Design, and Group Dynamics

**AND**

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

Project Docs, UI, & Teamwork

**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.**

This is the first course in a group-based, two-course capstone sequence: ENSC 405W, ENSC 440. Topics include group writing processes, project documentation and engineering design, group dynamics, engineering standards, project management, dispute resolution, intellectual property, entrepreneurship, and user interface design. These groups will be maintained for the completion of the capstone project in ENSC 440. Students who have taken (ENSC 304 and ENSC 305W) may not take ENSC 405W for credit. Engineering Science students cannot take MSE 401W or MSE 405W for credit. Students must take ENSC 440 in the term directly following successful completion of ENSC 405W. Grades awarded in ENSC 405W are conditional on the successful completion of ENSC 440 in the subsequent term.

**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.

No Library resources required.

Library report status

**RATIONALE FOR INTRODUCTION OF THIS COURSE**

\*\*\*This course is replacing ENSC 304 and ENSC 305W; ENSC 405W will now become part of a new 2 course sequence. ([ENSC 304: The user is often overlooked in the engineer's quest for a functional and efficient design. This course examines the factors that make designs more or less usable and how to integrate usability constraints and testing procedures into the design process])

**SCHEDULING AND ENROLLMENT INFORMATION**

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

Spring 2017 (Needs to be included as of Fall 2015 calendar for program)  
Annual.

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

What is the probable enrollment when offered? Estimate: 120



**CREDITS**

Indicate number of credits (units): 3

|                               |         |         |          |     |       |
|-------------------------------|---------|---------|----------|-----|-------|
| Indicate number of hours for: | Lecture | Seminar | Tutorial | Lab | Other |
|                               | 2       |         |          | 2   |       |

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

Steve Whitmore, Mike Sjoerdsma

**WQB DESIGNATION** (attach approval from Curriculum Office)

W Designation is pending.

**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**.

Prerequisites: ENSC 105W, ENSC 204, ENSC 351, a minimum of 100 units , and 2 completed co-op terms.

**COREQUISITE**

None

**STUDENT LEARNING OUTCOMES**

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

1. Demonstrate evidence of ability to competently draft and revise a variety of engineering documents (SFU W Certification):
  - Project proposal
  - Functional specifications
  - Design specifications
  - Progress report
  - Engineering Journal
  - Poster Presentation
2. Demonstrate the following CEAB (Canadian Engineering Accreditation Board) indicators of learning outcomes:
  - Effectively represents engineering issues and the engineering profession to the broader community.
  - Recognizes the responsibilities of an engineer to identify and address legal issues of occupational safety and intellectual property as well as differentiating moral, legal, and social dimensions of responsibility.
  - Participates actively in meetings, generating ideas and identifying concerns with potential solutions.
  - Integrates standards, codes of practice, and legal and regulatory factors into decision-making process as appropriate.
  - Incorporates sustainability considerations (societal, ecological, and economic) in decision-making, recognizing the potential impact, both short-term and long-term.
  - Incorporates cost considerations throughout the design and execution of a project and manages the project budget; evaluates the life-cycle economic and financial costs and benefits of the project.
  - Evaluates whether a project is economically attractive using the tools of economic analysis; assesses the scope and dimensions of the project or task as a starting point for estimating costs and scale of effort required.
  - Conducts risk analysis of projects to comprehend, assess, and quantify the consequences of uncertainties in project parameters; and devises strategies for their management.
  - Plans and schedules projects to bring them in on budget and time using a work breakdown and resource plan.

**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:

None.

**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.

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Chair, Department/School Date

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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.

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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.

Not Applicable.

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 \_\_\_\_\_



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**MEMORANDUM**

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**ATTENTION** Ed Park, Associate Dean, FAS

**DATE** August 8, 2014

**FROM** Susan Rhodes, Director  
University Curriculum & Institutional Liaison

**PAGES** 1

**RE:** ENSC W designation approval

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The University Curriculum Office has approved **W** designation for the following proposed new FAS course, effective Summer 2015 (1154):

**ENSC 405-3 – Project Documentation, User Interface Design, and Group Dynamics**

This course is proposed to replace co-requisites ENSC 305W-1 and 440W-4 as the required upper division **W** within the ENSC curriculum. ENSC 305W will be deleted, and ENSC 440 will no longer be offered as a **W** course, but will be part of a two-term capstone sequence paired with ENSC 405W.

**cc:** Lesley Shannon, UCC Chair, School of Engineering Science  
Kamal Gupta, Director, School of Engineering Science



## Changes to all Engineering Science Majors and Honours Programs

The following text is being added to each of the program's options to correctly reflect the external transfer process. We particularly wish to remove any mention of a fixed transfer GPA as our external transfer GPA often needs to be raised due to our limited capacity to take on transfer students and the variable quality of the applicant pool.

### Current

#### External Transfer from Another Post-Secondary Institution

Students transferring from other universities, regional colleges, or technical institutions must be eligible for University admission, and must submit a University application. ~~External transfer applicants may apply to begin study in any term and must have an admission average of 2.5.~~

### Proposed

#### External Transfer from Another Post-Secondary Institution

Students transferring from other universities, regional colleges, or technical institutions must be eligible for University admission, and must submit a University application. *Please see [www.sfu.ca/students/admission-requirements.html](http://www.sfu.ca/students/admission-requirements.html) for further information.*

This change has been made to the second paragraph of *each* option Major and Honours Program Requirements section. This change is required to correctly reflect that our core course requirements comprise both technical and non-technical courses. Without the word "also," the sentence reads as if only non-technical courses are required.

#### Program Requirements

...

This program's core course requirements consist of non-technical courses which broaden education and develop awareness of social, economic and managerial factors affecting engineering and scientific work.

#### Program Requirements

...

This program's core course requirements *also* consist of non-technical courses which broaden education and develop awareness of social, economic and managerial factors affecting engineering and scientific work.



**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

Course number    Credit    Title    Description    Prerequisite    Course deletion    Learning Outcomes

Indicate number of hours for: Lecture \_\_\_\_\_ Seminar \_\_\_\_\_ Tutorial \_\_\_\_\_ Lab \_\_\_\_\_

**FROM** \_\_\_\_\_ **TO** \_\_\_\_\_  
Course Subject/Number ENSC 180 Course Subject/Number ENSC 180

Credits \_\_\_\_\_ Credits \_\_\_\_\_

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**TO:** \_\_\_\_\_

**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**.

**FROM:** Prerequisite: MATH 151 or MATH 150. Corequisite: MATH 152 and MATH 232.

**PREREQUISITE**

**TO:** Prerequisite: (CMPT 128, CMPT 120, or CMPT 130) and (MATH 151 or MATH 150). Corequisite: MATH 152 and MATH 232.

**LEARNING OUTCOMES**

**RATIONALE**

We found that students who had struggled or had not yet taken a programming course were not successful in ENSC 180. As such, we are adding a basic programming course to the pre-requisite to better prepare our students for this course.



**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

Course number    Credit    Title    Description    Prerequisite    Course deletion    Learning Outcomes

Indicate number of hours for: Lecture \_\_\_\_\_ Seminar \_\_\_\_\_ Tutorial \_\_\_\_\_ Lab \_\_\_\_\_

**FROM** Course Subject/Number ENSC 225 **TO** Course Subject/Number \_\_\_\_\_

Credits \_\_\_\_\_ Credits \_\_\_\_\_

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**FROM:** \_\_\_\_\_ **DESCRIPTION TO:** \_\_\_\_\_

**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**.

**FROM:** ENSC 150 or CMPT 150, ENSC 220, MATH 232, and MATH 310. Quantitative. **TO:** (ENSC 150 or CMPT 150), (ENSC 220 or MSE 250), MATH 232, and MATH 310. Quantitative.

**LEARNING OUTCOMES**

**RATIONALE**

MSE equivalents are being added to the list of acceptable prerequisites.



**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

Course number    Credit    Title    Description    Prerequisite    Course deletion    Learning Outcomes

Indicate number of hours for: Lecture \_\_\_\_\_ Seminar \_\_\_\_\_ Tutorial \_\_\_\_\_ Lab \_\_\_\_\_

**FROM** Course Subject/Number ENSC 320 **TO** Course Subject/Number \_\_\_\_\_

Credits \_\_\_\_\_ Credits \_\_\_\_\_

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**FROM:** \_\_\_\_\_ **DESCRIPTION TO:** \_\_\_\_\_

**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**.

**FROM:** ENSC 220, MATH 232, and MATH 310. **TO:** (ENSC 220 or MSE 250), MATH 232, and MATH 310.

**LEARNING OUTCOMES**

**RATIONALE**

MSE equivalentents are being added to the list of acceptable prerequisites.



**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

Course number    Credit    Title    Description    Prerequisite    Course deletion    Learning Outcomes

Indicate number of hours for: Lecture \_\_\_\_\_ Seminar \_\_\_\_\_ Tutorial \_\_\_\_\_ Lab \_\_\_\_\_

**FROM** Course Subject/Number ENSC 425 **TO** Course Subject/Number \_\_\_\_\_

Credits \_\_\_\_\_ Credits \_\_\_\_\_

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**TO:** \_\_\_\_\_

**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**.

**FROM:** ENSC 320, 325 and 380 and a minimum of 80 units. **TO:** ENSC 320, ENSC 325, (ENSC 380 or MSE 280), and a minimum of 80 units.

**PREREQUISITE**

**LEARNING OUTCOMES**

**RATIONALE**

MSE equivalents are being added to the list of acceptable prerequisites.



**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

Course number    Credit    Title    Description    Prerequisite    Course deletion    Learning Outcomes

Indicate number of hours for: Lecture \_\_\_\_\_ Seminar \_\_\_\_\_ Tutorial \_\_\_\_\_ Lab \_\_\_\_\_

**FROM** \_\_\_\_\_ **TO** \_\_\_\_\_  
Course Subject/Number ENSC 429 Course Subject/Number \_\_\_\_\_

Credits \_\_\_\_\_ Credits \_\_\_\_\_

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**FROM:** \_\_\_\_\_ **DESCRIPTION**

**TO:** \_\_\_\_\_

**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**.

**FROM:** (ENSC 327 or 328), ENSC 380, and a minimum of 80 units.

**PREREQUISITE**

**TO:** (ENSC 327 or ENSC 328), (ENSC 380 or MSE 280), and a minimum of 80 units.

**LEARNING OUTCOMES**

**RATIONALE**

MSE equivalents are being added to the list of acceptable prerequisites.



EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

Course number Credit Title Description Prerequisite Course deletion Learning Outcomes

Indicate number of hours for: Lecture Seminar Tutorial Lab

FROM Course Subject/Number ENSC 440 TO Course Subject/Number ENSC 440 Credits 4 Credits 3

TITLE

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

FROM: Capstone Engineering Science TO: Capstone Engineering Science

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

FROM: TO:

DESCRIPTION

FROM: This capstone design course is based around a group project that consists of researching, designing, building, and testing the hardware implementation of a working system...

DESCRIPTION

TO: This is the second course in the group-based, two-course capstone sequence: ENSC 405W, ENSC 440. The capstone design course is based around a group project that consists of researching, designing, building, and testing the hardware implementation of a working system...

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.

PREREQUISITE

TO: ENSC 405W and at least 100 units. Students will be automatically enrolled in ENSC 440 in the term immediately following successful completion of ENSC 405W.

FROM: At least 100 units. Corequisite: ENSC 305

LEARNING OUTCOMES

RATIONALE

The number of credit hours is reduced by one to reflect that some of the material previously associated with ENSC 440 is now shifted from 440 into the new ENSC 405W. Furthermore ENSC 405W will become the first part in a mandatory new 2-course sequence. So ENSC 305 is being removed as a corequisite and made a prerequisite under its new course number (ENSC 405W). Finally, ENSC 340 no longer exists (cannot be taken for further credit), ENSC 370 has been removed and reassigned as a completely new course (therefore may be taken for further credit), and only the MSE capstone courses (ENSC 442 and MSE 411W) and ENSC 440W need to be excluded for further credit.

Effective term and year Spring 2017 (must be in calendar fall 2015)



**EXISTING COURSE, CHANGES RECOMMENDED**

Please check appropriate revision(s):

Course number    Credit    Title    Description    Prerequisite    Course deletion    Learning Outcomes

Indicate number of hours for: Lecture \_\_\_\_\_ Seminar \_\_\_\_\_ Tutorial \_\_\_\_\_ Lab \_\_\_\_\_

**FROM** \_\_\_\_\_ **TO** \_\_\_\_\_  
Course Subject/Number ENSC 450 Course Subject/Number \_\_\_\_\_

Credits \_\_\_\_\_ Credits \_\_\_\_\_

**TITLE**

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

**FROM:** \_\_\_\_\_ **TO:** \_\_\_\_\_

**DESCRIPTION**

**FROM:** \_\_\_\_\_ **DESCRIPTION**

**DESCRIPTION**

**TO:** \_\_\_\_\_

**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.**

**FROM:** ENSC 225 and ENSC 350, and a minimum of 80 units.

**PREREQUISITE**

**TO:** (ENSC 225 or ENSC 226 or MSE 251) and ENSC 350, and a minimum of 80 units.

**LEARNING OUTCOMES**

**RATIONALE**

MSE equivalents (ENSC 226 and MSE 251) are being added to the list of acceptable prerequisites





EXISTING COURSE, CHANGES RECOMMENDED

Please check appropriate revision(s):

Course number Credit Title Description Prerequisite Course deletion Learning Outcomes

Indicate number of hours for: Lecture 3 Seminar 0 Tutorial 0 Lab 1

FROM ENSC 472 TO ENSC 472
Course Subject/Number
Credits 4 Credits 4

TITLE

(1) LONG title for calendar and schedule, no more than 100 characters including spaces and punctuation.

FROM: Rehabilitation Engineering and Assistive Devices TO: Orthopaedic and Rehabilitation Engineering

(2) SHORT title for enrollment and transcript, no more than 30 characters including spaces and punctuation.

FROM: Rehab Eng Assist Dev TO: Ortho and Rehab Engineering

DESCRIPTION

FROM: Provides students with exposure to essential topics in rehabilitation engineering and the design of assistive devices...

DESCRIPTION

TO: Provides students with an advanced understanding, from a biomedical engineering perspective, of how human musculoskeletal tissues...

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.

PREREQUISITE

TO: (ENSC 380 or MSE 280) and a minimum of 80 units.

LEARNING OUTCOMES

RATIONALE

These changes will expand the focus on ENSC 472 to engineering aspects of orthopaedics and rehabilitation medicine, including the design of rehabilitative, surgical and pharmaceutical treatments...

MSE equivalents are being added to the list of acceptable prerequisites.