TO: Tim Weber, Faculty Secretary, Dean of Engineering Office  
FROM: Peter Douglas, Associate Dean, U/G Studies, Faculty of Engineering  
SUBJECT: Items for Approval at May 16, 2017 Engineering Faculty Council  

The following items were approved by the Faculty of Engineering Undergraduate Studies Committee on April 28, 2017. I am seeking approval for these items at Engineering Faculty Council on May 16, 2017.

Attachment #1 contains the modified portion of the following calendar descriptions: Option in Management Sciences (Item II), the Option and Minor in Entrepreneurship (Item III).

Attachment #2 contains the Catalog Report – Mtng #52 (Item I), #53 (Item II) and #54 (Item III).

Attachment #3 contains the academic advisement templates for the Option in Management Sciences (2018), the Option in Entrepreneurship (2018) and the Minor in Entrepreneurship (2018).

NOTE: Items which do not require Senate U/G Council approval are shown as small caps in italics, with wave underline. These items receive final approval at Engineering Faculty Council and are forwarded to Senate U/G Council for information and implementation.
i) Arch 110 - Change from 4 hours Studio to 7 contact Studio hours
j) Arch 113 - Change from 2 Lab contact hours to 4 Lab contact hours and from 2 Lecture contact hours to 3 Lecture contact hours

II) Option in Management Sciences

Background and Motivation

The proposed revisions are a result of recent changes to the Management Engineering program and MSCI courses that affect the Option in Management Sciences. The specific changes are below.

Changes to the course Catalog:
a) MSCI 261 – Antirequisites - add BME 364 Engineering Biomedical Economics (List B CSE for the BMEs) (September 2019). Remove ENVE 292 as it was last taught Fall 2016 to the ENVE class entering in 2014.
b) MSCI 411 – Antirequisites – add BET 450 Leadership due to overlapping course content.

d) MSCI 445 to the elective list. This course will be available beginning in Winter 2021 both as a technical elective to Management Engineering and Management Sciences Option students.

e) MSCI 446 – change title to “Data Mining”. MSCI 446 will be offered in the Fall until 2020 and then Winter beginning 2021.
f) MSCI 541 – change of title to “Search Engines”. MSCI 541 may be offered in the Winter until 2022, but will be offered in Fall starting in 2021.
g) MSCI 551 will be offered in the Spring until 2021, and its term of offering will change to Fall beginning Fall 2021.

III) Conrad Business, Entrepreneurship and Technology Centre

Background and Motivation

Internal discussions and consultations with students, advisors and staff over the past year led to a number of proposed changes. The changes are below.

a) Modifications to course titles and descriptions of BET 100, 310, 320 and 420 to more accurately describe the course delivery.
b) BET 310 changed to BET 340 to fall in line with recommended course sequencing (this course follows BET 320).
c) The following revisions to the Option and the Minor in Entrepreneurship to align with the recommended proposal:
   - Eliminate the Venture and Commercialization streams in both the Option and Minor.
   - Introduce a core plus elective structure and retain the experiential milestone.
   - Form a new core structure with BET 100, BET 320 and BET 340 for all Option and Minor students.
   - An additional three elective courses are required for the Option (BET and other relevant courses).
   - An additional five elective courses for the Minor (BET and other relevant courses).
   - A required Experiential Milestone is required for both the Minor and Option. Acceptable milestones include an E Co-op credit or equivalent (for non co-op students), a capstone project, or a project/senior level course with major focus on entrepreneurship.
d) Housekeeping changes include: term of offering for BET 320 is changed from F,W to F,W,S (all core Option and Minor courses are offered all terms); term of offering for BET 420 is changed from F,W,S to F only for reasons of staffing support.
e) Change the course title and description for BET 420 to reflect what is taught.

Note: As the changes will affect students currently working towards either the Minor or the Option in Entrepreneurship, students are allowed to complete the Option or Minor using either the calendar description when they took their first course towards the Option or Minor or the new requirements.
Option in Management Sciences

The Option in Management Sciences (MSCI Option) prepares students for decision making roles in business and technology management. The Option complements an engineer's technical training with a well-rounded education in management sciences, including studies of economics, organizational behaviour and design, decision analysis and operations research, production and service operations, information systems design, innovation, and technology strategy. Courses develop a conceptual understanding of management and organizational processes, practical skills to analyze and solve decision problems and implement business solutions, and an awareness of the impact of technology and innovation on organizations and society.

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The MSCI option consists of six courses, including three required courses (or their equivalents) and three elective courses (or equivalents). In order to gain a management science perspective during their option, students are required to have at least three of the six courses taught by the Department of Management Sciences. The three required MSCI option courses and equivalents are:

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<td>Engineering Economics: Financial Management for Engineers (F, W, S) - may be replaced by BME 364, CIVE 392, ECE 390, ENVE 292 or SYDE 262</td>
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plus three of the following elective courses or equivalents:

Stochastic Processes and Decision Making (S)

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<td>Managerial and Cost Accounting (F)</td>
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<td>MSCI 263C</td>
<td>Managerial Economics (S) - may be replaced by ECON 201</td>
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<td>MSCI 332†</td>
<td>Deterministic Optimization Models and Methods (F)</td>
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<td>MSCI 343†</td>
<td>Human-Computer Interaction (F) - may be replaced by CS 449 or SYDE 348</td>
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<td>Leadership and Influence (S) - may be replaced by BET 450</td>
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Requirements:

- At least three of the six courses must be MSCI courses from the Department of Management Sciences.
- A maximum of one course from outside the approved list may be counted toward the Option, subject to written approval of the MSCI Option Co-ordinator and the Associate Chair of Undergraduate Studies in the student's home department. The student must complete a Course Substitution Request form to obtain course approval.
- Students may take both MSCI 211 and MSCI 311, in which case, one will count toward the required courses and the other toward the elective courses.
- For the designation "Option in Management Sciences" to be shown on the transcript, the student must achieve a minimum overall cumulative average of 60% in the six courses.

Students have a wide degree of flexibility in course selection within the MSCI option. For students who wish to focus on a particular theme within Management Sciences, the department suggests the following selection of courses beyond the required set:

**Theme**  
**Courses**

**Operations Research Theme:** Two or more of MSCI 332, MSCI 431, MSCI 432, MSCI 435, MSCI 452, MSCI 531, MSCI 555

**Information Systems Theme:** Two or more of MSCI 343, MSCI 436, MSCI 442, MSCI 444, MSCI 445, MSCI 446, MSCI 541

**Management of Technology Theme:** Two or more of MSCI 311, MSCI 411, MSCI 421, MSCI 422, MSCI 423, MSCI 454

**Note:**  
Refer to the University's official Schedule of Classes for confirmation of actual course offerings each
Option in Management Sciences

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For further information about the MSCI Option, contact the MSCI Option Co-ordinator in the Management Sciences Department.
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- A maximum of one course from outside the approved list may be counted toward the Option, subject to written approval of the MSCI Option Co-ordinator and the Associate Chair of Undergraduate Studies in the student's home department. The student must complete a [Course Substitution Request form](#) to obtain course approval.
- Students may take both [MSCI 211](#) and [MSCI 311](#), in which case, one will count toward the required courses and the other toward the elective courses.
- For the designation "Option in Management Sciences" to be shown on the transcript, the student must achieve a minimum overall cumulative average of 60% in the six courses.

Students have a wide degree of flexibility in course selection within the MSCI option. For students who wish to focus on a particular theme within Management Sciences, the department suggests the following selection of courses beyond the required set:

**Theme**

**Operations Research Theme:**

Two or more of MSCI 332, MSCI 431, MSCI 432, MSCI 435, MSCI 452, MSCI 531, MSCI 555

**Information Systems Theme:**

Two or more of MSCI 442, MSCI 444, MSCI 445, MSCI 446, MSCI 541

**Management of Technology Theme:**

Two or more of MSCI 311, MSCI 411, MSCI 421, MSCI 422, MSCI 423, MSCI 454

**Note:**
Refer to the University's official [Schedule of Classes](#) for confirmation of actual course offerings each term.

For further information about the MSCI Option, contact the MSCI [Option Co-ordinator](#) in the Management Sciences Department.
Option in Entrepreneurship

Introduction

Overview

The option in entrepreneurship gives University of Waterloo engineering students an opportunity to pursue an innovative curriculum focused on two themes of entrepreneurship; venture creation and corporate entrepreneurship. While it is common to associate entrepreneurship with venture creation, there is growing demand for students who can act as "entrepreneurs within organizations", sometimes referred to as corporate entrepreneurs, or intrapreneurs. Both forms of entrepreneurship are critical to Canada's competitiveness in global markets and its economic vitality.

This option is designed for engineering students with a passion for entrepreneurship, who wish to leverage their technical background with whether that means starting a business, working in a start-up environment, or creating something new within an existing organization. It provides students with the business skills required to move ideas from concept to commercial and social success.

It The Option is built upon a uniquely UWaterloo an approach to entrepreneurial education that recognizes the need to couple academic and experiential learning to develop an individual's entrepreneurial capabilities. This is achieved through a combination of co-operative venture development or capstone project educational experiences and with academic content tailored to the entrepreneur's stage different stages of development for new ventures.

Option Objectives

Successful students in the Option in Entrepreneurship will:

- be able to find and identify significant problems worth solving
- be able to create and grow new entrepreneurial businesses
- understand the strategy and process of commercializing new technologies
- develop core business skills useful for early stage ventures
- be able to manage the introduction and growth of new business opportunities within existing organizations

Specific Course Requirements

Two Tracks: Venture Creation or Corporate Entrepreneurship

Students can pursue one of two tracks in the Entrepreneurship Option. Each track consists of required academic courses and an entrepreneurial experience component.

1. Venture Creation Track

   Academic Requirements

   All of the following courses:

   - BET 100 (List D complementary studies course) or ECON 220 (List C complementary studies course)
   - One complementary studies course from List B
   - BET 300, BET 310, BET 400
Plus one technical course in an area related to your entrepreneurial experience, approved by the option co-ordinator.

The Option requires students to complete six courses. Three of those courses are required and three are electives.

Required Courses

- BET 100 (List C complementary studies course)
- BET 320 (List C complementary studies course)
- BET 340 (List C complementary studies course)

Electives: choose three courses from this list

- Any other BET courses
- Any technical courses in an area related to the milestone requirement, as approved by the Option co-ordinator
- At most one List B complementary studies course
- BET 410A and BET 410B courses, but only if taken concurrently with any of the capstone project courses:
  - CHE 482/CHE 483 or CIVE 400/CIVE 401 or ECE 498A/ECE 498B or ENVE 400/ENVE 401 or GENE 403/GENE 404 or GEOE 400/GEOE 401 or MSCI 401/MSCI 402 or ME 481/ME 482 or MTE 481/MTE 482 or NE 408/NE 409 or SE 490/SE 491 or SYDE 461/SYDE 462.

Entrepreneurial Experience

In this track, students demonstrate entrepreneurial experience by earning credit for an Enterprise Co-op (E Co-op) Milestone.

2. Corporate Entrepreneurship Track

Academic Requirements

All of the following courses:

- BET 100 (List D complementary studies course) or ECON 220 (List C complementary studies course)
- One complementary studies course from List B
- BET 320, BET 400, BET 410A (0.25) and BET 410B (0.25)

Plus one technical course in an area related to entrepreneurial experience, approved by the Option Co-ordinator.

Entrepreneurial Experience Milestone Requirement

In this track, students demonstrate entrepreneurial experience through a capstone design project. Students must take the BET 410A and BET 410B courses concurrently with capstone project courses.

Capstone project courses include: CHE 482/CHE 483 or CIVE 400/CIVE 401 or ECE 498A/ECE 498B or ENVE 400/ENVE 401 or GENE 403/GENE 404 or GEOE 400/GEOE 401 or MSCI 401/MSCI 402 or ME 481/ME 482 or MTE 481/MTE 482 or NE 408/NE 409 or SE 490/SE 491 or SYDE 461/SYDE 462.
Students can demonstrate entrepreneurial experience either by earning credit for an Enterprise Co-op (E Co-op) semester or through a capstone design project. Students choosing the capstone design milestone must take BET 410A and BET 410B.

Option in Entrepreneurship

Introduction

Overview

This option is designed for engineering students with a passion for entrepreneurship, whether that means starting a business, working in a start-up environment, or creating something new within an existing organization. It provides students with the business skills required to move ideas from concept to commercial and social success.

The Option is built upon an approach to entrepreneurial education that recognizes the need to couple academic and experiential learning to develop an individual's capabilities. This is achieved through a combination of venture development or capstone project with academic content tailored to the different stages of development for new ventures.

Option Objectives

Successful students in the Option in Entrepreneurship will:

- be able to find and identify significant problems worth solving
- be able to create and grow new entrepreneurial businesses
- understand the strategy and process of commercializing new technologies
- develop core business skills useful for early stage ventures
- be able to manage the introduction and growth of new business opportunities within existing organizations

Course Requirement

The Option requires students to complete six courses. Three of those courses are required and three are electives.

Required Courses

- BET 100 (List C complementary studies elective)
- BET 320 (List C complementary studies elective)
- BET 340 (List C complementary studies elective)

Electives: choose three courses from this list

- Any other BET courses
- Any technical courses in an area related to the milestone requirement, as approved by the Option Co-ordinator
- At most one List B complementary studies elective
- BET 410A and BET 410B courses, but only if taken concurrently with any of the capstone project courses: CHE 482/CHE 483 or CIVE 400/CIVE 401 or ECE 498A/ECE 498B or ENVE 400/ENVE 401 or GENE 403/GENE 404 or GEOE 400/GEOE 401 or MSCI 401/MSCI 402
Entrepreneurial Milestone Requirement

Students can demonstrate entrepreneurial experience either by earning credit for an Enterprise Co-op (E Co-op) term, or through a capstone design project. Students choosing the capstone design milestone must take BET 410A and BET 410B.
Minor in Entrepreneurship

The Faculty of Engineering Conrad Business, Entrepreneurship, and Technology Centre offers an eight course minor in entrepreneurship that can be taken by undergraduate students in all faculties (the exception is Engineering, which has an Option in Entrepreneurship) at the University of Waterloo. It is designed for students with a passion for entrepreneurship, who wish to leverage their academic and technical background with the business skills required to move ideas from concept to commercial, organizational, or social success. It is built upon a uniquely Waterloo approach to entrepreneurship education that integrates academic and experiential learning to develop an individual’s entrepreneurial capabilities. This is achieved through a combination of co-operative or capstone project educational experiences and academic content tailored to the entrepreneur’s stage of development.

Because of the diverse backgrounds of Waterloo’s undergraduate students and different curriculum requirements of its various programs, the minor is structured to: (1) provide a foundation of core material that is generalizable to all forms of entrepreneurial interest, (2) ensure flexibility of choice in terms of type of entrepreneurship track selected, and (3) respect individual Faculty/Department desires that the entrepreneurial knowledge gained in the core of the minor be applied to the specific disciplinary content of the home faculty.

The minor’s innovative curriculum focuses on two tracks of entrepreneurship: venture creation and corporate entrepreneurship, and also allows students to pursue social entrepreneurship interests. While it is common to associate entrepreneurship with venture creation, there is an increasing demand for students who can act as ‘entrepreneurs within organizations’, sometimes referred to as corporate entrepreneurs, or intrapreneurs. Both aspects of entrepreneurship are critical to Canada’s competitiveness in global markets. Further, it is recognized that As well, many members of the University community students are interested in social entrepreneurship. Either of these two tracks may be tailored by students to pursue a social entrepreneurship venture or initiatives within firms. The Minor is designed to allow students to focus on any of these vital aspects of entrepreneurship.

Integration of experiential education is a critical component of the minor. As such, students in the venture creation track must participate in a milestone related to entrepreneurship. One possible milestone is an Enterprise Co-op (E Co-op) credit or Entrepreneurial Experience Milestone Term for non-co-op students, pursuing opportunities that lead to the formation of commercial or social ventures. Students in the corporate entrepreneurship track will be involved in Other milestones include a capstone style; project, thesis, major project course, or a senior course containing a major assignment that could lead to a corporate enhancement or social contribution. Approval of capstone courses milestones as an appropriate entrepreneurial experience will rest with the minor’s academic co-ordinator, referred to as the program co-ordinator in the remainder of this section of the Calendar. This approval will be based on whether the proposed capstone project satisfies the experiential intent of the program, as well as, there being having a suitable a faculty supervisor for the project.

Three Core Courses to both tracks

Must earn credit for all of the following courses:

- 1. BET 100 or equivalent
- 2. BET 320
- 3. BET 340
- BET 400
- BET 420
- Two electives intended to allow students to tailor their program through the choice of approved electives. Normally these electives would be chosen from the electives already accessible through
the student’s major program. A guiding principle for approval of elective courses is that they must support the student’s entrepreneurship experiential component.

Five Electives

1. **A minimum of three additional BET courses**
2. **Up to two more BET courses or electives available through the student’s home faculty. A guiding principle for approval of discipline-based elective courses is that they support the experiential milestone.**

Venture Creation Track

In addition to the core courses listed above students are required to successfully complete the following courses:

- BET 300
- BET 310
- One of the listed milestones:
  - E Co-op Milestone: This milestone is awarded to students in a co-op program that complete an E Co-op term. Entry into an E Co-op term requires the program co-ordinator’s permission. The intent of the program is to permit students who are developing venture concepts to pursue during their co-op terms, or
  - Entrepreneurial Experience Milestone: This milestone is intended for students in a regular program. It recognizes students who are pursuing venture creation concepts during either a study term or an off term. To achieve the milestone, non-co-op students must complete all the requirements normally expected from a student participating in an E Co-op term.

Conrad Business, Entrepreneurship and Technology Centre offers information sessions to students that provide the details on the E Co-op or the entrepreneurial experience requirements, as well as, assisting students in planning their minor.

Corporate Entrepreneurship Track

In addition to the core courses listed above students are required to successfully complete the following courses:

- BET 411
- BET 412 or an equivalent course, approved by the program co-ordinator, meeting the experiential component requirements of the minor.

Successful Completion of the Minor in Entrepreneurship

To be awarded the minor in entrepreneurship, students must complete all courses (core and approved electives) with an overall average of 65% and no course with a grade less than 60%, as well as, completing milestone requirements for students pursuing the venture creation track.

Specification for the Milestone associated with the Minor in Entrepreneurship

E Co-op Milestone: This milestone is only available to students in a co-op program and requires successful completion of the following:
1. Completion of an approved E Co-op term, approval based on an application and interview with the co-ordinator, and demonstration that there is an accessible market, realistic potential to create and deliver the proposed product or service, and suitable a work plan approved by the co-ordinator.

2. Attendance at 100% of workshops and presentations during the initial week of the term (this is for students on their first E Co-op term only, those in following terms are welcome to attend but it is not mandatory). These workshops and presentations will be available by Skype.

3. Submission of an acceptable bi-weekly regular progress reports based on the agreed term work plan as assessed by the E Co-op co-ordinator.

4. Submission of an acceptable end-of-term progress presentation report (essentially a post-mortem analysis) as assessed by the E Co-op co-ordinator.

Entrepreneurship Experience Milestone Term: This milestone is available to any student pursuing an entrepreneurial experience outside a co-op credit any student engaged in starting a business. It requires:

1. Approval of the entrepreneurial experience is based on an application and interview with the E Co-op co-ordinator, and demonstration that there is an accessible market, realistic potential to create and deliver the proposed product or service, and a work plan approved by the co-ordinator. Note: It is expected that the experiential portion of this term will require engagement in the venture for 35 hours per week for a full 12- to 16-week term.

2. Attendance at 100% of workshops and presentations during the initial week of the term. These workshops and presentations will be available by Skype.

3. Submission of bi-weekly acceptable regular progress reports based on the agreed term work plan as assessed by the E Co-op co-ordinator.

4. Submission of an acceptable end-of-term progress presentation report (essentially a post-mortem analysis) as assessed by the E Co-op co-ordinator.

Capstone, Thesis, or Project/Senior-Level Course with Major Assignment: This milestone is available to any student.

1. A capstone project, thesis, or project/senior-level course with a major assignment satisfying the entrepreneurial experience requirement of the program, as determined by the program co-ordinator.

2. The milestone must have a faculty supervisor.

3. The milestone must be able to lead to a potential commercial or social application.

Minor in Entrepreneurship

Conrad Business, Entrepreneurship, and Technology Centre offers an eight course minor in entrepreneurship that can be taken by undergraduate students in all faculties (the exception is Engineering, which has an Option in Entrepreneurship). It is designed for students with a passion for entrepreneurship who wish to leverage their academic and technical background with the business skills required to move ideas from concept to commercial, organizational, or social success. It is built upon a uniquely Waterloo approach to entrepreneurship education that integrates academic and experiential learning to develop an individual’s capabilities. This is achieved through a combination of co-operative or capstone project educational experiences and academic content.

While it is common to associate entrepreneurship with venture creation, there is an increasing demand for students who can act as ‘entrepreneurs within organizations’, sometimes referred to as corporate entrepreneurs, or intrapreneurs. As well, many students are interested in social entrepreneurship. The
Minor is designed to allow students to focus on any of these vital aspects of entrepreneurship.

Experiential education is a critical component of the Minor. As such, students must participate in a milestone related to entrepreneurship. One possible milestone is an Enterprise Co-op (E Co-op) credit or Entrepreneurial Experience Term for non co-op students, pursuing opportunities that lead to the formation of commercial or social venture. Other milestones include a capstone style: project, thesis, major project course, or a senior course containing a major assignment that could lead to a corporate enhancement or social contribution. Approval of capstone milestones as an appropriate entrepreneurial experience will rest with the minor’s academic co-ordinator, referred to as the program co-ordinator in the remainder of this section of the Calendar. This approval will be based on whether the proposed capstone satisfies the experiential intent of the program, as well as, having a suitable faculty supervisor for the project.

Three Core Courses

- BET 100
- BET 320
- BET 340

Five Electives

1. A minimum of three additional BET courses.
2. Up to two more BET courses or electives available through the student's home faculty. A guiding principle for approval of discipline-based elective courses is that they support the experiential milestone.

Successful Completion of the Minor in Entrepreneurship

To be awarded the minor in entrepreneurship, students must complete all courses (core and electives) with an overall average of 65% and no course with a grade less than 60%, as well as completing milestone requirements.

Specification for the Milestone associated with the Minor in Entrepreneurship

E Co-op Milestone: This milestone is only available to students in a co-op program and requires successful completion of the following:

1. Completion of an approved E Co-op term, approval based on an application and interview with the co-ordinator, and demonstration that there is an accessible market, realistic potential to create and deliver the proposed product or service, and suitable work plan.
2. Attendance at 100% of workshops and presentations during the initial week of the term.
3. Submission of acceptable regular progress reports based on the agreed term work plan as assessed by the E Co-op co-ordinator.
4. Submission of an acceptable end-of-term progress report as assessed by the E Co-op co-ordinator.

Entrepreneurship Experience Term: This milestone is available to any student engaged in starting a business. It requires:

1. Approval of the entrepreneurial experience based upon an application and interview with the E Co-op co-ordinator. There must be an accessible market, realistic potential to create and deliver the proposed product or service, and a work plan. Note: It is expected that the experiential portion of this term will require engagement in the venture for 35 hours per week for a full 12- to 16-week term.
2. Attendance at 100% of workshops and presentations during the initial week of the term.
3. Submission of acceptable regular progress reports based on the agreed work plan as assessed by the E Co-op co-ordinator.
4. Submission of an acceptable end-of-term progress report as assessed by the E Co-op co-ordinator.

**Capstone, Thesis, or Project/Senior-Level Course with Major Assignment: This milestone is available to any student.**

1. A capstone project, thesis, or project/senior-level course with a major assignment satisfying the entrepreneurial experience requirement of the program, as determined by the program co-ordinator.
2. The milestone must have a faculty supervisor.
3. The milestone must be able to lead to a potential commercial or social application.
COURSE CHANGES (for approval)

Architecture - School of

Current Catalog Information

ARCH  110 ( 0.50 )  STU  Visual and Digital Media 1
Introduction to the use of graphic media in architecture. Students will engage in exercises in drawing using various media, acquire digital skills, and develop fluency in diverse forms of architectural presentation. [Offered: F]
No Special Consent Required
Requisites: Prereq: Architecture students only
Effective 01-MAY-2018
Component Change:
Rationale: This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The STU component is revised from 4 to 7 hours.

Current Catalog Information

ARCH  113 ( 0.50 )  LAB, LEC  Visual and Digital Media 2
Introduction to computing techniques in architecture. Students will be instructed in the conceptual foundations for computer use in architecture, graphic applications for the computer and skills for two-dimensional drawing, three-dimensional modelling and graphic techniques for visualization and portfolio development. Students will gain fluency in a range of software applications for the purposes of developing technical and visual proficiencies to be integrated into the design process. [Offered: W]
No Special Consent Required
Requisites: Prereq: ARCH 110
Effective 01-MAY-2018
Component Change:
Rationale: This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The LAB component is revised from 2 to 4 contact hours, the LEC component is revised from 2 to 3 contact hours.

Current Catalog Information

ARCH  142 ( 0.50 )  LEC, TUT  Introduction to Cultural History
This course will introduce an approach to cultural history and attempt to localize modern humanity by looking at the principal icons and images that have been central to the compelling myths of Modernism, the principal movement and source of art and architecture in 20th century Western culture. This course will examine how living
myths are recapitulated or transformed in relationship to the artistic and cultural
conventions of the period. [Offered: F]
No Special Consent Required
Requisites: Prereq: Architecture students only
Effective 01-MAY-2018
Component Change: LEC
Rationale: This is a housekeeping review of the current contact hours versus the
practice of what is currently being taught. Architecture has not reviewed
or updated the contact hours in the past 15 years, with past curriculum
changes and content. The 2 hour TUT component is removed.

Current Catalog Information
ARCH 143 (1.00) LEC, TUT The Ancient World and Foundations of Europe
An overview of the cultural history of antiquity and the Early Middle Ages up to the
rise of feudalism and the rediscovery of Aristotle: from 2000 BC to 1100 AD.
Recognition of patterns of life and the concepts of order and conduct, the metaphors
and myths which evolve during this time period through the study of the ideas,
literature, art, architecture, technology and town design from ancient Greece and
Rome and the lands surrounding the Mediterranean until the end of the first
millennium. [Offered: W]
No Special Consent Required
Requisites: Prereq: ARCH 142
Effective 01-MAY-2018
Component Change: LEC
Rationale: This is a housekeeping review of the current contact hours versus the
practice of what is currently being taught. Architecture has not reviewed
or updated the contact hours in the past 15 years, with past curriculum
changes and content. The 4 hour TUT component is removed, the LEC component
is revised from 4 to 6 hours.

Current Catalog Information
ARCH 193 (1.50) LEC, STU Design Studio
Further development of basic skills, and the application of theory and design in
small scale architectural design projects. Introduction to issues of inhabitation,
program and context. [Offered: W]
No Special Consent Required
Requisites: Prereq: ARCH 192
Effective 01-MAY-2018
Component Change: STU
Rationale: This is a housekeeping review of the current contact hours versus the
practice of what is currently being taught. Architecture has not reviewed
or updated the contact hours in the past 15 years, with past curriculum
changes and content. The 2 hour LEC component is removed.

Current Catalog Information
ARCH 276 (0.50) LEC, TUT Timber: Design, Structure and Construction
Architectural case studies are used to examine conceptual development, structural design, building process and the selection of structural timber systems. Topics such as flexural, compression and truss members, connections, and plywood construction are studied using calculations, design aids, rules of thumb and the latest CSA design standards. [Offered: S]

Requisites:

Effective 01-MAY-2018

Component Change: LEC

Rationale:

This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 3 hour TUT component is removed.

Current Catalog Information

ARCH 292 (1.50) LEC, STU Design Studio

The exploration of design as a thinking process through the medium of small scale design projects. The development and analysis of architectural propositions concerning personal space within the context of a larger community. [Note: Required two day field trip, cost range $150 - $200. Offered: F]

No Special Consent Required

Requisites: Prereq: ARCH 193

Effective 01-MAY-2018

Component Change: STU

Rationale:

This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 2 hour LEC component is removed.

Current Catalog Information

ARCH 293 (1.50) LEC, STU Design Studio

Design involving problems of human perception and dimension in more complex environments, and dealing with issues of public and private space. Development of skills in analysis and programming, and further exploration of questions of siting and context. [Note: Field trip (one week). Estimated field trip cost: $400 - $500. Offered: S]

No Special Consent Required

Requisites: Prereq: ARCH 292

Effective 01-MAY-2018

Component Change: STU

Rationale:

This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 2 hour LEC component is removed.
Current Catalog Information

ARCH 392 (1.50) LEC, STU  Design Studio
Development of design skills and theoretical knowledge through their application in projects involving various building types in urban situations. Emphasis is placed upon issues of materiality and technology in architectural design. [Note: Required four to five day field trip, cost range $400 - $500. Offered: W]

No Special Consent Required

Requisites: Prereq: ARCH 293

Effective 01-MAY-2018

Component Change: STU

Rationale: This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 3 hour LEC component is removed, the STU component is revised from 1.5 to 14 hours.

Current Catalog Information

ARCH 393 (1.50) STU  Option Design Studio
This Design Studio is subdivided into distinct studio sections, each of which provides a specific platform for advanced research and design presented within the context of a topic or set of issues to be explored in relation to a specific design project, program and site. These studies range in both scale and scope, traversing an array of academic investigations, design hypotheses, research agendas, interdisciplinary explorations, and pedagogical intentions. These topics foreground the disciplinary arenas within architecture in the areas of architectural theory, media, technology, urbanism, and landscape. [Offered: F]

No Special Consent Required

Requisites: Prereq: ARCH 392

Effective 01-MAY-2018

Component Change: STU

Rationale: This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The STU component is revised from 3 to 14 hours.

Current Catalog Information

ARCH 428 (0.50) LEC, SEM  Rome and the Campagna (Rome)
History of settlement and building in Rome and the surrounding area from antiquity to the present. Acts of design in architecture, urban form and landscape related to political, cultural and spiritual authority of Rome. Comparison drawn between the image of the city, represented in literature and art, and the material facts of the place. Field trips, lecture. [Note: Course fee: Required travel fee applies to this course, please contact the Architecture Student Services Co-ordinator for current fees. [Offered: F]
No Special Consent Required

Requisites:

Effective 01-MAY-2018
Component Change:

Rationale:

This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 2 hour SEM component is removed, the LEC component is revised from 2 to 3 hours.

Current Catalog Information
ARCH 446 (0.50)  LEC, SEM
Italian Urban History (Rome)
The course provides a survey of the history of settlement and urban form on the Italian peninsula from antiquity to the present day. In it the influences upon the structure of public and private space are outlined for each historical period. These include constants such as geography and climate, but more especially the factors that induce and manifest change: politics, warfare, economics, social structure, the arts and theory. [Note: Course fee: $550.00. Offered: F]

No Special Consent Required
Requisites:

Effective 01-MAY-2018
Component Change:

Rationale:

This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 2 hour SEM component is removed, the LEC component is revised from 2 to 3 hours.

Current Catalog Information
ARCH 449 (0.50)  LEC, SEM
The Development of Modern Italian Architecture (Rome)
The course addresses the issues of architecture and urbanism in Rome and Italy from 1750 to the present. It explores the relationship between cultural, political and artistic phenomena such as Futurism, Novecento and Rationalism, that anticipate and create modernism in Italy. [Two one day field trips, estimated cost $60.00. Offered: F]

No Special Consent Required
Requisites:

Effective 01-MAY-2018
Component Change:

Rationale:

This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 2 hour SEM component is removed, the LEC component is revised from 2 to 3 hours.
Current Catalog Information
ARCH 473 (0.50) LEC Technical Report
Students will investigate and report on technical issues as they relate to the
development of the comprehensive building project in the parallel Design Studio.
Innovation and integration in architectural design will be stressed with respect to
structure, building envelope, environmental systems, health and life safety, movement
systems, site planning and the integration of information technology. [Offered: S]
No Special Consent Required
Requisites :
Prereq: Level at least 4A Architecture. Coreq: ARCH 493
Effective 01-MAY-2018
Component Change: LEC
Rationale :
This is a housekeeping review of the current contact hours versus the
practice of what is currently being taught. Architecture has not reviewed
or updated the contact hours in the past 15 years, with past curriculum
changes and content. Addition of 3 LEC contact hours (none were shown).

Current Catalog Information
ARCH 492 (1.50) STU Design Studio
The studio course is mounted in Rome, Italy, with the school's own faculty and
premises, and offers a unique opportunity to undertake design studies in a truly rich
architectural heritage. The main focus is the nature of the institution and its
relationship to the city and its culture. Students participating in the Rome term
are expected to defray the costs of travel, accommodation and food. For students
unable to study in Rome, an alternative studio is offered in Cambridge. It presents
similar design projects and theoretical questions in a North American context.
[Offered: F]
No Special Consent Required
Requisites :
Prereq: ARCH 393
Effective 01-MAY-2018
Component Change: STU
Rationale :
This is a housekeeping review of the current contact hours versus the
practice of what is currently being taught. Architecture has not reviewed
or updated the contact hours in the past 15 years, with past curriculum
changes and content. The SEM component is revised from 3 to 14 hours.

Current Catalog Information
ARCH 493 (1.50) LEC, STU Design Studio/Comprehensive Building Design
This studio represents a culmination of the pre-professional degree, through the
integration and application of skills and knowledge to a complex building project.
Students will develop designs to a high level of detail. A concern for technical
material, environmental and legal aspects of architecture will support open
speculation and innovative design. [Offered: S]
No Special Consent Required
Requisites :
Prereq: ARCH 492
Effective 01-MAY-2018

Component Change: STU

Rationale: This is a housekeeping review of the current contact hours versus the practice of what is currently being taught. Architecture has not reviewed or updated the contact hours in the past 15 years, with past curriculum changes and content. The 3 hour LEC component is removed, the STU component is revised from 18 to 14 hours.
COURSE CHANGES  (for approval)

Management Sciences

Current Catalog Information
MSCI 261 (0.50)  LEC, TST, TUT  Engineering Economics: Financial Management for Engineers
  Introductory Finance: time value of money, cash flow analysis. Investment evaluation
  methods: present worth, annual worth and internal rate of return. Depreciation models
  and asset replacement analysis. The impact of inflation, taxation, uncertainty and
  risk on investment decisions. [Offered: F,W,S]
  No Special Consent Required
  Requisites : Prereq: Engineering students only. Antireq: CIVE 292/392, ECE 390, ENVE 292, SYDE 262
Effective 01-SEP-2019
Requisite Change : Prereq: Engineering students only. Antireq: BME 364, CIVE 392, ECE 390, SYDE 262
Rationale : The antirequisite is updated adding BME 364 (a List B CSE for Biomedical Engineering students), and removing ENVE 292 (inactive).

Current Catalog Information
MSCI 411 (0.50)  LEC, TUT  Leadership and Influence
  This course will provide students with an overview of how management, psychology, marketing, and related fields have approached the topics of leadership, influence, and power. The first section of the course will address the antecedents of leadership (e.g., How do specific leaders emerge? What are the qualities of good leaders?). The second section of the course will address the act of leadership (e.g., How do leaders influence their followers? What limitations are inherent to leadership positions?) Specific topics covered include leadership styles, persuasion, social influence, evolutionary perspectives, motivating others, and managing conflict. [Offered: S]
  No Special Consent Required
Effective 01-SEP-2018
Requisite Change : Antireq: BET 450
Rationale : Addition of an antirequisite BET 450 due to overlapping course content.

End of Report
COURSE CHANGES  (for approval)

Conrad Business, Entrepreneurship & Technology Ctr

Current Catalog Information

BET 100  ( 0.50 )  LEC Essentials of Entrepreneurial Behaviour

This course is applicable to students with differing academic backgrounds, entrepreneurship interests (venture, employee entrepreneurship or social enterprise) and level of program. The core conceptual framework for this course is an entrepreneurship model that allows students to understand and practise the continuum of steps that are associated with the disciplined execution of commercial, green, charitable and employee entrepreneurship. The sequence of online modules address the growing importance of entrepreneurship to the Ontario and Canadian context, how successful entrepreneurs search for "big ideas", the process of research, observation and inquiry required at various stages of entrepreneurship development (value proposition, customer identification, channel selection, and resource needs), and the importance of building a business case around promising ideas. [Note: This course is offered online. Offered: F,W,S]

No Special Consent Required

Effective 01-MAY-2018

Title Change: Foundations of Entrepreneurial Practice

Description Change: Successful entrepreneurs combine intellectual rigour with innovation to create solutions that have impact. It is a process that starts with a search for "big ideas" using tools such as research, observation, and appreciative inquiry. Next, entrepreneurs analyze situations and apply creativity techniques to develop solutions. Finally, solutions are tested against business drivers including customer value propositions, customer identification, channel selection, and resource needs. This course covers the three steps that form the foundation of all entrepreneurial success: big ideas, solutions, and testing. Because of its broad scope, the course is valuable to students from different academic backgrounds, entrepreneurship interests, and program level. [Note: This course is offered online. Offered: F,W,S]

Rationale: A revision to the title and course description to reflect the intent of this course. The course material is about finding the right idea to pursue. For this course description, there was extensive consultation with Larry Smith, and the work done to develop the Problems Lab. This course expresses the academic piece of that co-development effort.

Current Catalog Information

BET 320  ( 0.50 )  LEC Introduction to Commercialization Strategy

The objective of this course is to provide an understanding of the commercialization
process, based on business theory and practice, with a specific focus on assessment of opportunities and development of a business case which may be built around the capstone project. Course content includes business planning in a corporate context, intellectual property strategy, and development of the skills necessary to be successful leading change and launching new ideas in a corporate environment.

[Offered: F,W]

No Special Consent Required

**Effective 01-MAY-2018**

**Title Change:** Entrepreneurial Strategy

**Description Change:** Once your "big idea" has been formulated, what is the best way to realize its potential? With whom should you partner? How do you protect your intellectual property? What is the optimal business model? The objective of this course is to provide an understanding of the commercialization process, with a specific focus on assessment of opportunities and development of an entrepreneurial business plan. Course content includes the importance of strategic partnerships, understanding the bases of competition, conducting industry and market level analyses, evaluating innovative ideas for commercial potential, business planning in a corporate context, intellectual property strategy, and strategic tools needed for launching new ideas. [Note: It is recommended that you take BET 100 prior to this course. Offered: F,W,S]

**Rationale:** A revision to the title and course description to reflect the intent of this course. This course is about figuring out the best strategy for commercializing the idea. Addition of a spring term offering.

**Current Catalog Information**

**BET 310 (0.50) LEC**

Enterprise Co-op Entrepreneurship Planning and Execution

This course is taken concurrently with a student's first E Co-op term. This is a requirement for the venture creation theme consolidating current E Co-op workshops and seminars with the addition of online content. Topics include: Business planning and execution; Understanding customers and your value proposition; Refining your business model; Corporate legal issues; Hiring employees; Understanding your competitors; The local entrepreneurial ecosystem; Grants and funding. Requires a post-mortem/root cause analysis report to be submitted at the end of the term. (Note: This is a requirement for the venture creation theme consolidating current E Co-op workshops and seminars with the addition of online content. Students will be given permission if enrolled in an E Co-op term. Offered: F,W,S)

Instructor Consent Required

**Effective 01-MAY-2018**

**Subject/Catalog Nbr Change:** BET 340

**Title Change:** Essentials of Entrepreneurial Planning and Execution

**Description Change:** Success starts with finding a solution to a "big idea" and then creating the right strategy to bring it to market. The final step in the process is explored in this course, the disciplined execution of strategy. A broad range of skills are required for this including understanding founder and team dynamics, hiring and firing, cash flow management, project management,
developing suitable equity structures and compensation, pitching, fund-raising, internal and external communications, and people skills. This course explores the business skills and knowledge needed to take a new venture, whether it is a start-up or part of an existing organization, or from strategy to market. [Note: It is recommended that you take BET 100 and BET 320 prior to this course. Offered: F,W,S]

Rationale:
A revision to the title and course description to reflect the intent of this course. This course is renumbered to reinforce the idea that the appropriate course sequence is BET 100, then BET 320, and finally BET 340 (formerly 310). This course in the core sequence is about the skills required to execute the strategy began in BET 320.

Current Catalog Information
BET 420 ( 0.50 ) LEC Social Entrepreneurship and Corporate Social Responsibility
Social entrepreneurship involves the application of business and management principles and skills to solving important social problems in viable and sustainable ways. It can involve the creation of new ventures, or the activities of existing corporations in the social sphere. It can be undertaken by for-profit ventures, not-for-profit organizations, and government. This course will involve the study of both successful and failed social enterprises and corporate social responsibility (CSR) efforts, and cover important principles of social enterprise, the impact of legal forms on the pursuit of social goals, theories of social innovation and social change, and multiple approaches to pursuing social goals in a market economy. [Offered: F,W,S]
No Special Consent Required

Effective: 01-MAY-2018

Title Change: Entrepreneurship for Social Impact
Description Change: This course explores how innovative approaches can address social problems, create organizations that make positive change, have significant social impact, and are sustainable and economically viable. Topics include the principles of social entrepreneurship, design thinking applied to identifying significant problems, innovative solutions for social impact, and identifying opportunities for social change. Students will develop skills and tools for refining and implementing their ideas as well as measuring the success and value of mission-driven organizations. Through case studies, lectures, and workshops, students will also develop skills in strategic thinking with a socially conscious business mindset to create high-impact ventures. [Offered: F]

Rationale: A revision to the title and course description to reflect the intent of this course. Since this is not a core course, and enrolment has not warranted holding it three times per year, we are reducing it to once a year. This course emphasizes the strategic nature of the material rather than the content items such as CSR (Corporate Social Responsibility) statements.

End of Report
# Analysis of Degree Requirements

## For Academic Advisement & Calendar – Effective 2018/09/01

<table>
<thead>
<tr>
<th>Career:</th>
<th>Undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program:</td>
<td>UEN05: Engineering Co-op</td>
</tr>
<tr>
<td>RG:</td>
<td>1936</td>
</tr>
<tr>
<td>Crse Share Set</td>
<td>5</td>
</tr>
</tbody>
</table>

### Academic Plan Overall Requirements:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Notes</th>
<th>RQ</th>
<th>CL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>Min Major Credits</td>
<td>(No Overlap within option)</td>
<td>4637</td>
<td>2054, 2057, 2063, 2067, 6285, 7816, 7817, 8871</td>
</tr>
<tr>
<td>60 %</td>
<td>Min Major Cumulative Average</td>
<td>For all option courses Intersected with DLST (include in GPA)</td>
<td>3312</td>
<td>2054, 2057, 2063, 2067, 6285, 7816, 7817, 8871</td>
</tr>
</tbody>
</table>

### Academic Plan Course Requirements:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Course List Description</th>
<th>Course List</th>
<th>RQ</th>
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<th>Dble Cnt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.50</td>
<td>Organizational Core - 3 required courses</td>
<td>(MSCI 211 or 311 or PSYCH 238) (MSCI 261 or BME 364 or CIVE 392 or ECE 390 or ENVE 292 or SYDE 262) (MSCI 331 or BME 411 or CIVE 332 or CO 250 or ENVE 335 or SYDE 411)</td>
<td>3077</td>
<td>2063, 2057</td>
<td>Y</td>
</tr>
<tr>
<td>1.50</td>
<td>Elective Courses - choose 3 in this list, a maximum of one course from the elective list may be replaced by one course from outside of the Engineering faculty, subject to approval</td>
<td>(MSCI 211 or 311 or PSYCH 238) (MSCI 343 or CS 449 or SYDE 348) (MSCI 431 or CS 457 or SYDE 531) (MSCI 444 or CS 430 or 432 or 490) (MSCI 263 or ECON 201) (MSCI 411 or BET 450) CIVE 596, ECON 371, HRM 200, MSCI 262, 332, 411, 421, 422, 423, 432, 435, 436, 442, 445, 446, 452, 531, 541, 551, 555, 597, 598, 599, SYDE 533 (MSCI 454 or BET 300)</td>
<td>3078</td>
<td>2063, 8871, 6285, 7816, 7817</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Note:** 1.5 units must be MSCI courses.

### Completed by: Linda Beaulieu  
**Date:** April 17, 2017  
**Validated by:** Peter Douglas  
**Date:**  
**Validated by:** Selcuk Onay/Mark Smucker  
**Date:** e-copied April 17, 2017

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1 May students double count these courses to satisfy another degree requirement (Y/N)?
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</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>Min Major Credits</td>
<td>All Courses listed below</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 %</td>
<td>Min Major Cumulative Average</td>
<td>For all option courses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>(Student to choose ONE Track below)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>Track 1: Venture Creation</td>
<td>(BET 100 or ECON 220), BET 300, 310, 400</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>One technical course in an area related to the students' entrepreneurial experience approved by the Option Coordinator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Entrepreneurial Experience</strong> (no counted weight – verify mode) + E Co-op Milestone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enterprise E Co-op</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.00</td>
<td>Track 2: Corporate Entrepreneurship</td>
<td>(BET 100 or ECON 220), BET 320, 400, 410A and 410B</td>
<td>Y</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>One technical course in an area related to the students' entrepreneurial experience approved by the Option Coordinator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Entrepreneurial Experience</strong> (no counted weight – verify mode)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Student to complete two capstone project courses associated with their plan</td>
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<tr>
<td></td>
<td></td>
<td>[List of courses yet to be determined]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[List of courses yet to be determined]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.50</td>
<td>Core – required courses</td>
<td>BET 100, 320, 340</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.50</td>
<td>Electives: choose three courses</td>
<td></td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Any other BET courses</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Any technical courses related to the milestone as approved by the Option Coordinator</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>At most one List B complementary studies elective</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Students can demonstrate entrepreneurial experience by either earning credit for Enterprise Co-op (E Co-op) term, OR through the capstone project. Students choosing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(CHE 482 and 483) or (CIVE 400 and 401) or (ECE 498A and 498B) or (ENVE 400 and 401) or (GENE 403 and 404) or (GEOE 400 and 401) or (MSCI 401 and 402) or (ME 481 and 482) or (MTE 481 and 482) or (NE 408 and 409) or (SE 490 and 491) or (SYDE 461 and SYDE 462) the capstone design project must also take BET 410A and 410B</td>
<td></td>
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<td>---</td>
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</tr>
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</table>

ECON 220 = CSE List C
BET 100 = CSE List C

**Completed by:** Linda Beaulieu

**Validated by:** Peter Douglas

**Validated by:** Marc Hurwitz

**Date:** April 20, 2017
**Date:**
**Date:** e-copied April 20, 2017
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<tbody>
<tr>
<td>4.00</td>
<td>Min Major Credits</td>
<td>Students choose and complete one of the tracks listed below. Non-engineering students only.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 %</td>
<td>Min Major Cumulative Average</td>
<td>No course less than a 60% grade</td>
<td></td>
<td></td>
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<tbody>
<tr>
<td>2.00</td>
<td>Core for both tracks</td>
<td>BET 100 (or equivalent course), 320, 400, 420</td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>2.00</td>
<td>Venture Creation track - plus two technical electives relevant to this track - One of the Milestones Listed</td>
<td>BET 300, 310</td>
<td>E Co-op Milestone (for E Co-op students) or Entrepreneurial Experience Milestone (non E Co-op students)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>2.00</td>
<td>Corporate Entrepreneurship track - plus two technical electives relevant to this track</td>
<td>BET 411, 412 (or equivalent course)</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>1.50</td>
<td>Core – required courses</td>
<td>BET 100, 320, 340</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50</td>
<td>Electives - choose five courses</td>
<td>• Minimum of three additional BET courses • Up to two more BET courses or electives from the student’s home faculty and must support the experiential milestone</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Enterprise Co-op (E Co-op) Milestone**

**Enterprise Experience Term**

**Capstone, Thesis, or Project/Senior-Level Course with Major Assignment**

Completion of an approved E Co-op Term

Student engaged in starting a business

A capstone project, thesis, or project/senior-level course with major assignment satisfying the entrepreneurial requirement as determined by the program co-ordinator

---

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**Date:** April 20, 2017  
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