



DATE: March 21, 2025

TO: Senate

FROM: Dr. David Hornsby, Vice-Provost and Associate Vice-President (Academic), and Chair, Senate Quality Assurance and Planning Committee

RE: 2025-26 Calendar Curriculum Proposals
Undergraduate and Graduate Major Modifications

Background

Following Faculty Board approval, as part of academic quality assurance, major curriculum modifications are considered by the Senate Quality Assurance and Planning Committee (SQAPC) before being recommended to Senate. Major curriculum modifications are also considered by the Senate Committee on Curriculum, Admissions and Studies Policy (SCCASP).

Documentation

Recommended calendar language, along with supplemental documentation as appropriate, are provided for consideration and approval.

Omnibus Motion

In order to expedite business with the multiple changes that are subject to Senate approval at this meeting, an omnibus motion will be moved and include all items below. Senators may wish to identify any of the 7 major modifications that they feel warrant individual discussion that will then not be covered by the omnibus motion. Independent motions as set out below will nonetheless be written into the Senate minutes for those major modifications that Senators agree can be covered by the omnibus motion.

THAT Senate approve the major modifications as presented below.
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Major Modifications

1. ACSE 4907

SCCASP approval: December 3, 2024

SQAPC approval: February 27, 2025

Senate Motion March 28, 2025

THAT Senate approve the introduction of ACSE 4907 as presented with effect from Fall 2025.

2. MSc Management

SCCASP approval: January 21, 2025

SQAPC approval: February 27, 2025

Senate Motion March 28, 2025

THAT Senate approve the major modification to the MSc in Management and MSc in Management with Collaborative Specialization in Climate change and the introduction of BUSI 5988 with effect from Fall 2025.

3. INAF 5919

SCCASP approval: February 18, 2025

SQAPC approval: February 27, 2025

Senate Motion March 28, 2025

THAT Senate approve the deletion of INAF 5919 as presented with effect from Fall 2025.

4. PHD International Affairs

SCCASP approval: February 4, 2025

SQAPC approval: February 27, 2025

Senate Motion March 28, 2025

THAT Senate approve the major modification to the PhD program in International Affairs and the deletion of INAF 6700 & 6907 as presented with effect from Fall 2025.

5. MEng Engineering Practice

SCCASP approval: March 4, 2025

SQAPC approval: March 13, 2025

Senate Motion March 28, 2025

THAT Senate approve the major modification to the MEng Engineering Practice programs and the introduction of EWEX 5001 & 5002 as presented with effect from Fall 2025.

6. EARTH 4910

SCCASP approval: March 4, 2025

SQAPC approval: March 13, 2025

Senate Motion March 28, 2025

THAT Senate approve the deletion of EARTH 4910 as presented with effect from Fall 2025.

7. PHD Communications

SCCASP approval: December 17, 2024

SQAPC approval: March 13, 2025

Senate Motion March 28, 2025

THAT Senate approve the major modification to the PHD comprehensive examinations in Communication as presented with effect from Fall 2025.

Course Change Request

New Course Proposal

Date Submitted: 09/30/24 5:05 pm

Viewing: **ACSE 4907 : Engineering Research Project**

Last edit: 11/12/24 5:49 pm

Changes proposed by: shawnkenny

In Workflow

- 1. CIVE ChairDir UG
- 2. ENG FCC
- 3. ENG FBoard
- 4. PRE SCCASP
- 5. SCCASP
- 6. SQAPC
- 7. Senate
- 8. PRE CalEditor
- 9. Banner

Approval Path

- 1. 10/07/24 8:49 pm
Shawn Kenny
(shawnkenny): Approved for CIVE ChairDir UG
- 2. 10/17/24 4:14 pm
Samuel Ajila
(samuelajila): Rollback to CIVE ChairDir UG for ENG FCC
- 3. 10/17/24 7:56 pm
Shawn Kenny
(shawnkenny): Approved for CIVE ChairDir UG
- 4. 10/17/24 9:07 pm
Samuel Ajila
(samuelajila): Approved for ENG FCC
- 5. 10/26/24 10:56 am
Samuel Ajila
(samuelajila): Approved for ENG FBoard

Effective Date	2025-26
Workflow	majormod
New Resources	
Level	Undergraduate
Course Code	ACSE
Course Number	4907

Title	Engineering Research Project
Title (short)	Engineering Research Project
Faculty	Faculty of Engineering and Design
Academic Unit	Department of Civil and Environmental Engineering
Credit Value	1.0
Special/Selected Topics	Not Applicable
Significant Experiential Learning	Applied Research Project
Course Description	A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.
Prerequisite(s)	fourth-year status in Engineering and permission of the department.
Class Format	No formal lectures
Precluded Courses	CIVE 4907, CIVE 4917 and ACSE 4917
Also listed as	
Piggybacked Courses	
Grade Mode	Standard Letter Grade
Schedule Type	Directed Studies *May constitute a major modification under Carleton's IQAP. Please consult https://carleton.ca/viceprovost/major-minor-modifications/ for more details.
Unpaid Placement	No
Summary	Add new course for ACSE program based on CIVE calendar description
Rationale for new course	Create an ACSE specific number
Course reviewer comments	shawnkenny (10/17/24 2:53 pm): Add CIVE 4917 and ACSE 4917 to precluded courses samuelajila (10/17/24 4:14 pm): Rollback: Please, the precluded courses requires an amendment. angelwagner (11/12/24 5:49 pm): Changed to major modification.

Key: 11139

[Preview Bridge](#)

Program Change Request

Date Submitted: 08/14/24 8:51 am

Viewing: MSC-7N ~~TBD-1782~~ : M.Sc. in Management

Last approved: 12/13/17 3:27 pm

Last edit: 02/18/25 9:24 am

Last modified by: nataliephelan

Changes proposed by: sandrabauer

In Workflow

1. BUSI ChairDir GR
2. BUS Dean
3. BUS GFCC
4. BUS FBoard
5. PRE SCCASP
6. SCCASP
7. SQAPC
8. Senate
9. CalEditor

Approval Path

1. 12/11/24 8:53 am
Shaobo Ji (shaoboji):
Approved for BUSI
ChairDir GR
2. 12/11/24 8:56 am
Shaobo Ji (shaoboji):
Approved for BUS Dean
3. 12/11/24 9:20 am
Shaobo Ji (shaoboji):
Approved for BUS GFCC
4. 12/11/24 9:22 am
Shaobo Ji (shaoboji):
Approved for BUS FBoard
5. 01/14/25 12:15 pm
Natalie Phelan
(nataliephelan):
Approved for PRE
SCCASP
6. 01/21/25 10:39 am
Erika Strathearn
(erikastrathearn):
Approved for SCCASP

History

1. Dec 13, 2017 by Melissa
Doric (melissadoric)

Calendar Pages Using this
Program

Business
Management

Effective Date	2025-26
Workflow	majormod
Program Code	<u>MSC-7N</u> TBD-1782
Level	Graduate
Faculty	Sprott School of Business
Academic Unit	School of Business
Degree	Master of Science
Title	M.Sc. in Management

Program Requirements

M.Sc. Management (5.0 credits)

Requirements - Thesis pathway (5.0 credits):

1. 1.5 credits in: 1.5
- BUSI 5980 [0.5] Foundations of Management Theory and Research

BUSI 5981 [0.5] Statistics for Business Research

BUSI 5982 [0.5] Research Methodology in Business
2. 0.5 credit from: 0.5
- BUSI 5983 [0.5] Qualitative Research Design

BUSI 5984 [0.5] Quantitative Research Design
3. 1.0 credit from: 1.0
- BUSI 5080 [0.5] Seminar in Accounting I

BUSI 5081 [0.5] Seminar in Accounting II

BUSI 5180 [0.5] Seminar in Management I: Modern Organization Theory

BUSI 5181 [0.5] Seminar in Management II: Current Topics in Organizational Behaviour

BUSI 5280 [0.5] Seminar in Marketing I: Management and Strategy

BUSI 5281 [0.5] Seminar in Marketing II: Consumer Behaviour

BUSI 5380 [0.5] Seminar in Management of Production/Operations I: Strategic Management of Production Systems

BUSI 5381 [0.5] Seminar in Management of Production/Operations II: Production/Technology/Strategy Interface

BUSI 5383 [0.5] Systems Optimization: Methods and Models

BUSI 5480 [0.5] Seminar in Information Systems I: Research Issues

BUSI 5481 [0.5] Seminar in Information Systems II: Current Trends

BUSI 5580 [0.5] Seminar in Finance I: Topical Issues in Investments

BUSI 5581 [0.5] Seminar in Finance II: Theories and Empirical Methods in Corporate Finance

BUSI 5780 [0.5] Seminar in International Business I: International Markets and Strategy

BUSI 5781 [0.5] Seminar in International Business II: Managing in a Global Environment
- or elective courses taken with the permission of the Director of the Graduate Research Program
- ~~4. Completion of the Research Tutorial~~
4. 0.0 credit in:

[BUSI 5987 \[0.0\]](#) [M.Sc. Thesis Tutorial](#)**5. 2.0 credits in:**

2.0

[BUSI 5989 \[2.0\]](#) M.Sc. Thesis

Total Credits

5.0

Requirements - Research essay pathway (5.0 credits):**1. 1.5 credits in:**1.5[BUSI 5980 \[0.5\]](#) [Foundations of Management Theory and Research](#)[BUSI 5981 \[0.5\]](#) [Statistics for Business Research](#)[BUSI 5982 \[0.5\]](#) [Research Methodology in Business](#)**2. 0.5 credit from:**0.5[BUSI 5983 \[0.5\]](#) [Qualitative Research Design](#)[BUSI 5984 \[0.5\]](#) [Quantitative Research Design](#)**3. 2.0 credits from:**2.0[BUSI 5080 \[0.5\]](#) [Seminar in Accounting I](#)[BUSI 5081 \[0.5\]](#) [Seminar in Accounting II](#)[BUSI 5180 \[0.5\]](#) [Seminar in Management I: Modern Organization Theory](#)[BUSI 5181 \[0.5\]](#) [Seminar in Management II: Current Topics in Organizational Behaviour](#)[BUSI 5280 \[0.5\]](#) [Seminar in Marketing I: Management and Strategy](#)[BUSI 5281 \[0.5\]](#) [Seminar in Marketing II: Consumer Behaviour](#)[BUSI 5380 \[0.5\]](#) [Seminar in Management of Production/Operations I: Strategic Management of Production Systems](#)[BUSI 5381 \[0.5\]](#) [Seminar in Management of Production/Operations II: Production/Technology/Strategy Interface](#)[BUSI 5383 \[0.5\]](#) [Systems Optimization: Methods and Models](#)[BUSI 5480 \[0.5\]](#) [Seminar in Information Systems I: Research Issues](#)[BUSI 5481 \[0.5\]](#) [Seminar in Information Systems II: Current Trends](#)[BUSI 5580 \[0.5\]](#) [Seminar in Finance I: Topical Issues in Investments](#)[BUSI 5581 \[0.5\]](#) [Seminar in Finance II: Theories and Empirical Methods in Corporate Finance](#)[BUSI 5780 \[0.5\]](#) [Seminar in International Business I: International Markets and Strategy](#)[BUSI 5781 \[0.5\]](#) [Seminar in International Business II: Managing in a Global Environment](#)or elective courses taken with the permission of the Director of the Graduate Research Program**4. 1.0 credit in:**1.0[BUSI 5988 \[0.0\]](#) [M.Sc. Research Essay](#)

Total Credits

5.0

New Resources

No New Resources

Summary

- 1) Add new research essay pathway for the MSc Management.
- 2) Thesis pathway, Item 4 - add 0.0-credit course code to existing tutorial requirement
- 3) Add the word 'pathway' to existing Thesis pathway

Rationale for change

- 1) This new pathway is intended to provide an exit path for existing MSc Thesis and PhD Management students, rather than for recruiting purposes. 2) This 0.0 credit course is intended to ensure students in the MSc program are aware of the proposal requirement and complete this program milestone on time. 2) Editorial

Transition/Implementation

n/a - new pathway

Program reviewer comments

nataliephelan (10/25/24 9:35 am): Changed program code to match that used in Banner.

nataliephelan (02/18/25 9:23 am): Per S. Zyglidopoulos, the separate subrequirement for a research tutorial was a holdover from this program's creation based on the PhD requirements, and should not be included in the master's.

Program Change Request

Date Submitted: 08/15/24 3:10 pm

Viewing: MSC-7NCH ~~TBD-2011~~ : M.Sc. Management with Collaborative Specialization in Climate Change

Last approved: 02/08/21 12:23 pm

Last edit: 12/11/24 8:25 am

Last modified by: nataliephelan

Changes proposed by: sandrabauer

In Workflow

1. BUSI ChairDir GR
2. BUS Dean
3. BUS GFCC
4. BUS FBoard
5. PRE SCCASP
6. SCCASP
7. SQAPC
8. Senate
9. CalEditor

Approval Path

1. 12/11/24 8:53 am
Shaobo Ji (shaoboji):
Approved for BUSI ChairDir GR
2. 12/11/24 8:56 am
Shaobo Ji (shaoboji):
Approved for BUS Dean
3. 12/11/24 9:20 am
Shaobo Ji (shaoboji):
Approved for BUS GFCC
4. 12/11/24 9:22 am
Shaobo Ji (shaoboji):
Approved for BUS FBoard

History

1. Feb 8, 2021 by Melissa Doric (melissadoric)

Calendar Pages Using this Program		Business Climate Change (Collaborative Program) Management
Effective Date	2025-26	
Workflow	majormod	
Program Code	<u>MSC-7NCH</u> TBD-2011	
Level	Graduate	
Faculty	Sprott School of Business	
Academic Unit	School of Business	
Degree	Master of Science	
Title	M.Sc. Management with Collaborative Specialization in Climate Change	

Program Requirements

M.Sc. Management with Collaborative Specialization in Climate Change (5.0 credits)

Requirements - Thesis pathway (5.0 credits):		
1. 1.0 credit in:		1.0
CLIM 5000 [1.0]	Climate Collaboration	
2. 0.0 credit in:		
CLIM 5800 [0.0]	Climate Seminar Series	
3. 1.5 credits in:		1.5
BUSI 5980 [0.5]	Foundations of Management Theory and Research	
BUSI 5981 [0.5]	Statistics for Business Research	
BUSI 5982 [0.5]	Research Methodology in Business	
4. 0.5 credit from:		0.5
BUSI 5983 [0.5]	Qualitative Research Design	
BUSI 5984 [0.5]	Quantitative Research Design	

5. 0.0 credit in:			
	BUSI 5987 [0.0]	M.Sc. Thesis Tutorial	
6. 2.0 credits in:			2.0
	BUSI 5989 [2.0]	M.Sc. Thesis (in the specialization)	
Total Credits			5.0
Requirements - Research essay pathway (5.0 credits):			
1. 1.0 credit in:			1.0
	CLIM 5000 [1.0]	Climate Collaboration	
2. 0.0 credit in:			
	CLIM 5800 [0.0]	Climate Seminar Series	
3. 1.0 credit in approved electives			1.0
4. 1.5 credits in:			1.5
	BUSI 5980 [0.5]	Foundations of Management Theory and Research	
	BUSI 5981 [0.5]	Statistics for Business Research	
	BUSI 5982 [0.5]	Research Methodology in Business	
4. 0.5 credit from:			0.5
	BUSI 5983 [0.5]	Qualitative Research Design	
	BUSI 5984 [0.5]	Quantitative Research Design	
6. 1.0 credit in:			1.0
	BUSI 5988 [0.0]	M.Sc. Research Essay (in the specialization)	
Total Credits			5.0

New Resources	No New Resources
Summary	<div>*Assoc with majormod MSC-7N. 1. Add research essay pathway. 2. Thesis pathway, item 5, add numbered tutorial course. 3. Add the word 'pathway' to existing Thesis pathway.</div>
Rationale for change	<div>1. The new research essay pathway is intended to provide an exit path for existing MSc Thesis and PhD Management students, rather than for recruiting purposes. 2) This 0.0 credit course is intended to ensure that students in the MSc program are aware of the proposal requirement and complete this program milestone on time. 3) Editorial.</div>
Transition/Implementation	n/a

Program reviewer comments

nataliephelan (10/25/24 9:42 am): Changed program code to match that used in Banner.

Summary

*Assoc with majormod MSC-7N. - add research essay pathway to M.Sc. Management.

Rationale for new course

Course reviewer comments

nataliephelan (10/25/24 9:23 am): Updated summary - referred to Finance instead of Management.

Key: 11037

[Preview Bridge](#)

Course Change Request

A deleted record cannot be edited

Course Delete Proposal

Date Submitted: 11/08/24 1:43 pm

Viewing: **INAF 5919 : M.A./JD Thesis**

Last approved: 03/13/19 3:16 am

Last edit: 11/08/24 1:43 pm

Changes proposed by: nataliephelan

In Workflow

- 1. INAF ChairDir GR
- 2. PA Dean
- 3. PA GFCC
- 4. PA FBoard
- 5. PRE SCCASP
- 6. SCCASP
- 7. SQAPC
- 8. Senate
- 9. Banner

Approval Path

- 1. 11/08/24 1:45 pm
Natalie Phelan
(nataliephelan):
Approved for INAF
ChairDir GR
- 2. 11/08/24 1:48 pm
Natalie Phelan
(nataliephelan):
Approved for PA Dean
- 3. 11/14/24 9:41 am
Vandna Bhatia
(vandnabhatia):
Approved for PA GFCC
- 4. 11/21/24 2:39 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA FBoard

History

- 1. Mar 13, 2019 by Mike
Labreque (mikelabreque)

Effective Date	2025-26
Workflow	<u>majormod</u> minormod
Level	Graduate
Course Code	INAF
Course Number	5919
Title	M.A./JD Thesis
Title (short)	M.A./JD. Thesis

Faculty	Faculty of Public Affairs
Academic Unit	Norman Paterson School of International Affairs
Credit Value	2.0
Special/Selected Topics	
Significant Experiential Learning	None
Course Description	A research thesis option that allows a student in the M.A./JD program to combine original research with legal and international affairs studies in an analysis of a topic of his or her choice.
Prerequisite(s)	A- average in all M.A. required courses and a minimum of 3.0 full course credits, permission of the School after the submission of a satisfactory proposal and identification of a suitable supervisory team.
Class Format	
Precluded Courses	

Also listed as

Piggybacked Courses

U Ottawa Code

Grade Mode	Thesis/Dissertation
Schedule Type	<div>*Masters Thesis</div> <div>*May constitute a major modification under Carleton’s IQAP. Please consult https://carleton.ca/viceprovost/major-minor-modifications/ for more details.</div>
Unpaid Placement	No
Summary	<div>Editor's note: originally submitted as a course edit; resubmitted here as a deactivation. Originally approved by INAF Chair November 6 2024, and PA Dean November 7 2024.</div> <div>Not offered since Winter 2012. No MA/JD students have requested to complete program with thesis since.</div>
Rationale for deactivation	Major modification to MA/JD program. Confirmed deletion of INAF 5919 MA/JD thesis option witU of O, Prof. Craig Forces (Carleton's faculty counterpart with MA/JD program).
Course reviewer comments	<div>nataliephelan (11/08/24 1:45 pm): Approved on behalf of INAF Chair; see summary.</div> <div>nataliephelan (11/08/24 1:48 pm): Approving on behalf of PA Dean; see summary.</div>

Key: 5161

[Preview Bridge](#)

Program Change Request

Date Submitted: 06/12/24 2:56 pm

Viewing: **PHD-43 : Ph.D. International Affairs**

Last approved: 04/11/23 2:09 pm

Last edit: 02/18/25 10:54 am

Last modified by: nataliephelan

Changes proposed by: sandrabauer

In Workflow

1. INAF ChairDir GR
2. PA Dean
3. PA GFCC
4. PA FBoard
5. PRE SCCASP
6. SCCASP
7. SQAPC
8. Senate
9. CalEditor

Approval Path

1. 06/12/24 3:15 pm
Yiagadeesen Samy
(yiagadeesensamy):
Approved for INAF
ChairDir GR
2. 08/20/24 5:06 pm
Vandna Bhatia
(vandnabhatia): Rollback
to INAF ChairDir GR for
PA Dean
3. 08/27/24 4:36 pm
Yiagadeesen Samy
(yiagadeesensamy):
Approved for INAF
ChairDir GR
4. 09/12/24 1:20 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA Dean
5. 09/19/24 11:39 am
Vandna Bhatia
(vandnabhatia):
Approved for PA GFCC
6. 10/08/24 12:26 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA FBoard
7. 01/31/25 12:02 pm
Natalie Phelan
(nataliephelan):
Approved for PRE
SCCASP
8. 02/05/25 10:22 am
Erika Strathearn

2/18/25, 10:55 AM

Ph.D. International Affairs

(erikastrathearn):
Approved for SCCASP

History

1. Nov 12, 2014 by vickih

2. Nov 12, 2014 by sandra

3. Nov 12, 2014 by sandra

4. Nov 12, 2014 by sandra

5. Nov 12, 2014 by sandra

6. May 11, 2015 by sandra

7. May 11, 2015 by sandra

8. May 20, 2015 by sandra

9. May 21, 2015 by sandra

10. May 21, 2015 by sandra

11. May 21, 2015 by sandra

12. Oct 22, 2015 by Sandra Bauer (sandrabauer)

13. Jan 13, 2016 by Patricia Lacroix (patricialacroix)

14. Apr 26, 2016 by Sandra Bauer (sandrabauer)

15. Mar 15, 2017 by lesliemacdonaldhicks

16. May 5, 2017 by Sandra Bauer (sandrabauer)

17. Feb 1, 2018 by Sandra Bauer (sandrabauer)

18. Apr 2, 2019 by Patricia Lacroix (patricialacroix)

19. May 10, 2019 by Mike Labreque (mikelabreque)

20. Feb 21, 2020 by Sandra Bauer (sandrabauer)

21. Feb 17, 2021 by Coleen Kornelsen (coleenkornelsen)

22. Feb 18, 2021 by Sandra Bauer (sandrabauer)

23. Mar 17, 2023 by Sandra Bauer (sandrabauer)

24. Apr 11, 2023 by Sandra Bauer (sandrabauer)

Calendar Pages Using this Program

[International Affairs](#)

Effective Date

2025-26

Workflow

[majormod](#) ~~minormod~~

Program Code

PHD-43

Level

Graduate

Faculty	Faculty of Public Affairs
Academic Unit	Norman Paterson School of International Affairs
Degree	Doctor of Philosophy
Title	Ph.D. International Affairs

Program Requirements

Ph.D. International Affairs (3.5 ~~(5.0~~ credits)

Requirements:

1. 1.5 credits in:		1.5
<u>INAF 6001</u> [0.5]	Qualitative Research Methods	
<u>INAF 6002</u> [0.5]	Quantitative Research Methods	
<u>INAF 6003</u> [0.5]	Advanced International Policy Analysis	
2. 0.0 credit in:		
<u>INAF 6005</u> [0.0]	<u>Doctoral Research Seminar</u>	
3. 0.5 credit in required INAF economics course for the declared field listed above (see Note)		0.5
3. 1.5 credits in courses in the declared field		1.5
4. 1.0 credit in courses in the declared field		1.0
5. Language requirement		
<u>Doctoral students must successfully complete an examination in a second language administered by the School of Linguistics and Language Studies, or meet the equivalent standard as determined by the School of Linguistics and Language Studies. Students are expected to complete this requirement or demonstrate significant progress by the end of their second year.</u>		
6. 0.5 credit in:		0.5
INAF 6700 [0.0]	Course INAF 6700 Not Found	
<u>INAF 6906</u> [0.5]	Doctoral Research Prospectus Seminar and Defence	
INAF 6907 [0.0]	Course INAF 6907 Not Found	
7. 0.0 credits in:		0.0
<u>INAF 6909</u> [0.0]	Doctoral Research Thesis	
Total Credits		3.5

Note: students without strong economics training may be required to complete additional INAF economics courses.

Language Requirement ~~Doctoral students must successfully complete an examination in a second language administered by the School of Linguistics and Language Studies, or meet the equivalent standard as determined by the School of Linguistics and Language Studies. Students are expected to complete this requirement or demonstrate significant progress by the end of their second year.~~ **Completion Timeline**

Ph.D. ~~students must be registered full time for the duration of their program.~~ students must be continuously registered as part-time or full-time for ~~Students are expected to successfully complete the~~ duration of their program; approval of field comprehensive examination (0.5 credit) by the ~~School must be obtained to transition from full-time to part-time status.~~ end of the first year, the required 4.0 credits of coursework by the end of their second year, and vice versa. Full-time students are

expected to successfully complete INAF 6005 by the end of ~~defend~~ their first term, the remaining required 3.0 credits research prospectus (0.5 credit) no later than the end of ~~coursework by the end of their second term, and INAF 6906 (research prospectus and defence) no later than the end of their fourth term.~~ the third year. A student whose performance on the field comprehensive examination is not deemed satisfactory will be allowed to repeat the examination once, and the second attempt must take place no later than the next academic term. Part-time students are expected ~~A student whose research prospectus defense is not deemed satisfactory will be required to~~ successfully complete INAF 6005 by ~~repeat the end of their second term~~ research prospectus defense in the program, next academic term, and no later than the remaining required 3.0 credits of coursework by ~~end of the end of their sixth term, and INAF 6906 (research prospectus and defence) no later than~~ Fall term of the end of their eighth term. ~~fourth year.~~

A student whose performance in INAF 6005 ~~on the field comprehensive examination is not deemed satisfactory at the end of their first term may~~ will be granted an extension ~~allowed to repeat the end of their examination once, and the second full-time term or the end of their fourth part-time attempt must take place no later than the next academic term.~~ A student whose performance ~~Students may only register in~~ INAF 6906 is not deemed satisfactory may be granted a second opportunity to defend their ~~6909 following successful defense of the research prospectus, provided that this can take place before the end of their fourth full-time term~~ are expected to demonstrate evidence of research progress annually, and will be required to present their work at the NPSIA Research Seminar Series ~~or sixth part-time term.~~ show equivalent research activity.

Students who have not successfully completed INAF 6005 or INAF 6906 ~~the comprehensive examination and/or prospectus defence~~ within the specified time will be subject to removal from the program. Students may register in INAF 6909 only following successful completion of INAF 6906 (including prospectus defence), are expected to demonstrate evidence of research progress annually, and are required to present their work at the NPSIA Research Seminar Series or show equivalent research activity.

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~~Students may only register in INAF 6909 following successful defense of the research prospectus, are expected to demonstrate evidence of research progress annually, and will be required to present their work at the NPSIA Research Seminar Series or show equivalent research activity.~~

New Resources

No New Resources

Summary

Rationale text posted in this field to allow formatting:

NPSIA PhD students currently take two years of coursework, along with a comprehensive exam between their first and second years. Coupled with the prospectus that they are expected to defend by the end of their third year, the current structure means that NPSIA students do not begin work on their dissertation until halfway through their third year and often not until their fourth year. As a result, NPSIA PhD students often have difficulty completing the programme by their fifth year. Indeed, many NPSIA PhD students do not complete the programme until their sixth year or more, which places significant strain on them financially and in terms of their career advancement. The heavy course structure, moreover, discourages a key demographic from pursuing our programmes, those who are employed with the Government of Canada.

Our proposed reforms aim to reduce completion times, streamline the programme, and offer a part-time option.

1) Reduce coursework.

To reduce these completion times and enable students to finish the programme within five years, this reform will reduce coursework to a single year. Students will take 3.0 credits in their first year: Advanced International Policy Analysis (INAF6003), a field economics course, two field elective courses, and two methods courses (INAF6001 and INAF 6002). Students will also register in a doctoral research seminar (INAF6005) in their first year.

Students will be expected to complete and defend their prospectus (INAF6906) by the end of the winter term of their second year, allowing them to begin work on their dissertation proper by the beginning of their third year. The dissertation would then be defended by the end of the fifth year, at the latest.

2) Eliminate the comprehensive field exam.

Students struggle to complete the readings for the comprehensive exams while completing their first year courses. Rather than thinking about their supervisor and dissertation topic, moreover, first year students understandably focus on the comprehensives. To address this situation while ensuring that students continue to have the breadth and depth that is expected of a doctoral program, the reform will emphasize Advanced International Policy Analysis (INAF6003) to give the students a proper grounding in the field of international affairs and make better use of the students' field and economics courses to round out their expertise.

3) Offer a part-time option for the PhD programme.

There is a significant interest in our PhD from working professionals within the Government of Canada. Since our PhD is policy-oriented, these potential students should be a natural fit with our program. Unfortunately, many choose not to apply, since we do not offer a part time option. A part time option would allow us to accommodate a greater number of these potential students. Students who wish to complete the programme full time would still have that option and degree would still be structured with a full-time student in mind.

Rationale for change

Summary: Modify PhD requirements and completion timeline.

Transition/Implementation

We hope to have the proposed programme modifications in place for new students entering the programme in the Fall 2025 term. Since we do not admit students in other terms, there will not be a need to adjust based on term of entry.

The changes will not affect students admitted in previous years. Students who entered the programme in the fall of 2024 and earlier will be expected to follow the existing sequence. We do not anticipate that this will cause any issues, since the fall 2024 cohort will take their comprehensive exams in the spring of 2025, before the new programme structure is in place. Three courses will see higher than usual enrollment in 2025-2026, since the fall 2024 cohort and fall 2025 cohort will be taking them at the same time: INAF 6001, 6002, and 6003. The current intake for the fall of 2024 is 7 students. We anticipate that we will also admit 7 students in the fall 2025 cohort. Since we hope to offer a part-time option, however, we anticipate that not all 7 students from the fall 2025 cohort will take these courses in 2025-2026. We therefore expect that these courses will have 10-12 students, which is manageable for a doctoral seminar.

Program reviewer comments

sandrabauer (06/17/24 9:16 am): Completion timeline statement updated to reflect program changes.

vandnabhatia (08/20/24 5:06 pm): Rollback: Please shorten and summarize the rationale for the changes to the program.

nataliephelan (09/20/24 9:51 am): Confirmed by P. Lagasse and V. Bhatia, changed item 2 to zero credit as INAF 6005 is a zero credit course, and then corrected the program heading with the correct credit count for the program.

nataliephelan (02/18/25 10:54 am): Subrequirement 3 - changed "below" to "above" as this reflects where the field course listing appears in relation to the PhD requirements on the program page. Under Completion Timeline heading, paragraph 2, changed "year" to "term", correcting an error so the part-time student timeline is stated properly.

Key: 965

Program Change Request

Date Submitted: 10/29/24 9:34 am

Viewing: **PHD-43AS : PhD International Affairs with Collaborative Specialization in African Studies**

Last approved: 04/03/23 6:19 pm

Last edit: 11/14/24 10:34 am

Last modified by: vandnabhatia

Changes proposed by: coleenkornelsen

In Workflow

- 1. INAF ChairDir GR
- 2. AFRI ChairDir GR
- 3. PA GFCC
- 4. PA FBoard
- 5. PRE SCCASP
- 6. SCCASP
- 7. SQAPC
- 8. Senate
- 9. CalEditor

Approval Path

- 1. 10/29/24 9:36 am
Yiagadeesen Samy (yiagadeesensamy): Approved for INAF ChairDir GR
- 2. 11/08/24 2:57 am
Nduka Otiono (ndukaotiono): Approved for AFRI ChairDir GR
- 3. 11/14/24 9:41 am
Vandna Bhatia (vandnabhatia): Approved for PA GFCC
- 4. 11/21/24 2:40 pm
Vandna Bhatia (vandnabhatia): Approved for PA FBoard

History

- 1. Apr 3, 2023 by Sandra Bauer (sandrabauer)

Calendar Pages Using this Program	African Studies International Affairs
Effective Date	2025-26
Workflow	majormod
Program Code	PHD-43AS

Level	Graduate
Faculty	Faculty of Public Affairs
Academic Unit	Institute of African Studies Norman Paterson School of International Affairs
Degree	
Title	PhD International Affairs with Collaborative Specialization in African Studies

Program Requirements

Ph.D. International Affairs with Collaborative Specialization in African Studies (5.0) ~~(6.0)~~ credits)

Requirements - Standard Admission:

1. 1.5 credits in:		1.5
<u>INAF 6001</u> [0.5]	Qualitative Research Methods	
<u>INAF 6002</u> [0.5]	Quantitative Research Methods	
<u>INAF 6003</u> [0.5]	Advanced International Policy Analysis	
2. 0.5 credit in:		0.5
3. 1.5 credits in courses in the declared field		1.5
<u>INAF 6005</u> [0.0]	<u>Doctoral Research Seminar</u>	
3. 0.5 credit in required INAF economics course for the declared field listed below (see Note, below)		0.5
<u>4. 1.0 credit in courses in the declared field</u>		<u>1.0</u>
5. 0.5 credit in:		0.5
<u>AFRI 5000</u> [0.5]	African Studies as a Discipline: Historical and Current Perspectives	
6. 0.0 credit in:		
<u>AFRI 5800</u> [0.0]	Scholarly Preparation in African Studies	
7. 0.5 credit in:		0.5
<u>INAF 6700</u> [0.0]	<u>Course INAF 6700 Not Found</u>	
<u>AFRI 6000</u> [0.5]	Thinking from Africa: Historical Perspectives, Contemporary Dimensions	
8. Language requirement (see details below)		
9. 1.0 credit in: doctoral research seminar and public defence of the doctoral research prospectus		1.0
<u>9. 0.5 credit in: doctoral research seminar and public defence of the doctoral research prospectus</u>		<u>0.5</u>
<u>INAF 6906</u> [0.5]	Doctoral Research Prospectus Seminar and Defence	
<u>INAF 6907</u> [0.0]	<u>Course INAF 6907 Not Found</u>	
10. 0.0 credit in:		0.0
<u>INAF 6909</u> [0.0]	Doctoral Research Thesis (in the Specialization)	
Total Credits		5.0

Note: students without strong economics training may be required to complete additional INAF economics courses.

Ph.D. International Affairs with Collaborative Specialization in African Studies

(Advanced Completion Option - 4.5 ~~5.5~~ credits)

Applicants to the Ph.D. International Affairs with Collaborative Specialization in African Studies who have completed a master's program with specialization in African Studies may be considered for admission to an Advanced Completion Option of the Ph.D.

Requirements - Advanced Completion Option:

1. 1.5 credits in:	1.5
<u>INAF 6001</u> [0.5]	Qualitative Research Methods
<u>INAF 6002</u> [0.5]	Quantitative Research Methods
<u>INAF 6003</u> [0.5]	Advanced International Policy Analysis
2. 0.5 credit in:	0.5
<u>INAF 6005</u> [0.0]	<u>Doctoral Research Seminar</u>
3. 0.5 credit in required INAF economics course for the declared field listed below (see Note, below)	0.5
<u>INAF 6700</u> [0.0]	<u>Course INAF 6700 Not Found</u>
4. 1.0 credit in courses in the declared field	1.0
5. 0.5 credit in:	0.5
<u>AFRI 6000</u> [0.5]	Thinking from Africa: Historical Perspectives, Contemporary Dimensions
5. 1.5 credits in:	1.5
6. Language requirement (see details below)	
7. <u>0.5 credit in: doctoral research seminar and public defence of the doctoral research prospectus</u>	<u>0.5</u>
<u>INAF 6906</u> [0.5]	Doctoral Research Prospectus Seminar and Defence
<u>INAF 6907</u> [0.0]	<u>Course INAF 6907 Not Found</u>
8. 0.0 credit in:	0.0
<u>INAF 6909</u> [0.0]	Doctoral Research Thesis (in the specialization)
Total Credits	4.5

Note: students without strong economics training may be required to complete additional INAF economics courses.

New Resources	No New Resources
Summary	*Assoc with PHD-43 majormod. Modify PhD International Affair requirements
Rationale for change	Associated with major modifications to PhD International Affairs.
Transition/Implementation	No changes to requirements needed for collaborative specialization.

Program reviewer comments	nataliephelan (10/29/24 10:54 am): Per C. Noja, changed to majormod workflow.
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Key: 2179

Course Change Request

A deleted record cannot be edited

Course Delete Proposal

Date Submitted: 08/30/24 10:35 am

Viewing: **INAF 6700 : Doctoral Field Comprehensive Seminar**

Last approved: 04/05/23 4:55 am

Last edit: 08/30/24 10:35 am

Changes proposed by: coleenkornelsen

In Workflow

1. INAF ChairDir GR

2. PA Dean

3. PA GFCC

4. PA FBoard

5. PRE SCCASP

6. SCCASP

7. SQAPC

8. Senate

9. Banner

Approval Path

1. 08/30/24 10:40 am
Yiagadeesen Samy
(yiagadeesensamy):
Approved for INAF
ChairDir GR

2. 09/12/24 1:19 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA Dean

3. 09/19/24 11:40 am
Vandna Bhatia
(vandnabhatia):
Approved for PA GFCC

4. 10/08/24 12:22 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA FBoard

History

1. Apr 5, 2023 by Coleen
Kornelsen
(coleenkornelsen)

Effective Date	2025-26
Workflow	majormod
Level	Graduate
Course Code	INAF
Course Number	6700
Title	Doctoral Field Comprehensive Seminar
Title (short)	Doctoral Field Comp Sem

Faculty	Faculty of Public Affairs
Academic Unit	Norman Paterson School of International Affairs
Credit Value	0.50
Special/Selected Topics	
Significant Experiential Learning	None
Course Description	The seminar helps to prepare students for writing their doctoral field comprehensive examinations while exposing them to the issues and approaches across the different doctoral field. Students write the examination in their approved field at the end of the winter term. Graded SAT/UNS.
Prerequisite(s)	Standing in the NPSIA Ph.D. program.
Class Format	
Precluded Courses	

1/27/25, 1:49 PM		INAF 6700: Doctoral Field Comprehensive Seminar	
Also listed as			
Piggybacked Courses			
U Ottawa Code			
Grade Mode		Satisfactory/Unsatisfactory	
Schedule Type		Seminar	
		*May constitute a major modification under Carleton’s IQAP. Please consult https://carleton.ca/viceprovost/major-minor-modifications/ for more details.	
Unpaid Placement		No	
Summary		*Associated with modifications to the PhD International Affairs.* Deactivate INAF 6700.	
Rationale for deactivation		Associated with modifications to the PhD International Affairs.	
Course reviewer comments			

Key: 10707

[Preview Bridge](#)

Course Change Request

A deleted record cannot be edited

Course Delete Proposal

Date Submitted: 09/16/24 3:55 pm

Viewing: **INAF 6907 : Doctoral Research Prospectus Defence**

Last approved: 04/27/20 3:07 am

Last edit: 10/25/24 9:57 am

Changes proposed by: coleenkornelsen

In Workflow

1. INAF ChairDir GR

2. PA Dean

3. PA GFCC

4. PA FBoard

5. PRE SCCASP

6. SCCASP

7. SQAPC

8. Senate

9. Banner

Approval Path

1. 09/16/24 4:37 pm
Yiagadeesen Samy
(yiagadeesensamy):
Approved for INAF
ChairDir GR

2. 09/18/24 9:08 am
Vandna Bhatia
(vandnabhatia):
Approved for PA Dean

3. 10/16/24 4:14 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA GFCC

4. 11/21/24 2:39 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA FBoard

History

1. Apr 27, 2020 by Patricia
Lacroix (patricialacroix)

Effective Date	2025-26
Workflow	<u>majormod</u> minormod
Level	Graduate
Course Code	INAF
Course Number	6907
Title	Doctoral Research Prospectus Defence
Title (short)	Prospectus Defence
Faculty	Faculty of Public Affairs
Academic Unit	Norman Paterson School of International Affairs
Credit Value	0.50
Special/Selected Topics	
Significant Experiential Learning	None
Course Description	Public defence of a research prospectus that will be the basis for the dissertation.
Prerequisite(s)	Successful completion of INAF 6906, the Doctoral Research Prospectus Seminar.
Class Format	
Precluded Courses	
Also listed as	

1/27/25, 1:48 PM

INAF 6907: Doctoral Research Prospectus Defence

Piggybacked Courses

U Ottawa Code

Grade Mode

Satisfactory/Unsatisfactory

Schedule Type

Other

*May constitute a major modification under Carleton’s IQAP. Please consult <https://carleton.ca/viceprovost/major-minor-modifications/> for more details.

Unpaid Placement

No

Summary

Associated with PHD-43 majormod
Deactivate INAF 6907.

Rationale for deactivation

[Associated with modifications to PhD International Affairs.](#)

Course reviewer comments

Key: 9883

[Preview Bridge](#)

Associated Minors

Course Code	Course Name	Action
INAF 6002	Qualitative Research Methods	Edited
INAF 6003	Advanced International Policy Analysis	Edited
INAF 6005	Doctoral Research Seminar	Added
INAF 6906	Doctoral Research Prospectus Seminar and Defence	Edited
INAF 6923	Ph.D. Tutorial In International Affairs	Deleted
INAF 6924	Ph.D. Tutorial in International Affairs	Deleted

Executive Summary for Major Modifications

MEMORANDUM

To: Senate Quality Assurance and Planning Committee (SQAPC) for Minor Modifications

From: Prashant R. Waghmare, Associate Dean and Director, Engineering Practice Program

CC: Dean L. Kostiuk; Associate Dean Samuel Ajila

Date: 2024 February 10 (updated October 23, 2024)

Subject: Major Modification to Master of Engineering – Engineering Practice

1. Description of Changes

The Engineering Practice (EP) Program is proposing modifications to its existing courses: i) changing course titles, ii) changing course descriptions, iii) adding new courses, and iv) deleting courses. **These modifications constitute a 33% change to the Engineering Practice program.**

Changing Course Title:

EGEN 5103 Pavements and Materials needs to be changed to **“Infrastructure and Pavement Management”**

Reason: to better reflect course content.

EGEN 5401 Physical Processes in Water and Wastewater Treatment needs to be changed to **“Physico-Chemical Processes in Water and Wastewater Treatment”**

Reason: to better reflect course content.

EGEN 5504 Kinematics and Dynamics needs to be changed to **“Kinematics and Dynamics of Human Movement”**

Reason: to better reflect course content.

Changing Course Title and Description:

EGEN 5200 “Advanced Operating Systems” needs to be changed to **“Operating Systems”**.

Change course description to:

"Introduction to operating system principles. Structure of an operating system; management of CPU, processes, and memory; dead-lock problems, file systems. Concurrent programming."

Reason: to adjust course content to students' level and needs, which also needs to be reflected in the title.

EGEN 5300 “Signal Processing” needs to be changed to **"Signal Processing Electronics"**.

Change course description to:

"This course provides an overview of analysis and design of analog and mixed-signal circuit building blocks used in continuous-time and discrete-time signal processing. Topics include: analysis and design of continuous-time filters; discrete-time signal analysis using z-transform; discrete-time filter design based on switched capacitors; fundamental techniques for digital-to-analog and analog-to-digital converters."

Reason: to adjust course content to students' level and needs, which also needs to be reflected in the title.

EGEN 5301 “Integrated Circuits” needs to be changed to **"VLSI Design."**

Change course description to:

"Very Large-Scale Integration (VLSI) design techniques and their application. CMOS devices and technology. Modular Design Approach and Use of CAD tools in an integrated circuit design flow. Building blocks of CMOS analog and digital circuits. Advanced digital logic circuit techniques."

Reason: to adjust course content to students' level and needs, which also needs to be reflected in the title.

EGEN 5303 “Sensor Systems” needs to be changed to **"Silicon Sensors."**

Change course description to:

"Overview of sensor technologies with emphasis on devices suitable for integration with silicon integrated circuits. Sensor design and signal conditioning. Sensor circuitry and adaptations for automotive, biomedical, and other instrumentation applications."

Prerequisite(s): enrolment in the M.Eng.- Engineering Practice program and an undergraduate degree in Electrical Engineering or permission of the Director."

Reason: to adjust course content to students' level and needs, which also needs to be reflected in the title.

EGEN 5306 “Telecommunications Systems and Networks” needs to be changed to **"Telecommunications Systems."**

Change course description to:

"Communications fundamentals including decibel, intermodulation, 1dB compression, dynamic range, SNR, noise figure, noise temperature, antenna gain, EIRP, G/T. Links; transceiver architecture, diversity, fade margin, link calculations, multiple accessing."

Reason: to adjust course content to students' level and needs, which also needs to be reflected in the title.

ECMP 5200 “Research Methods and Professional and Ethical Practice” needs to be changed to **“Research Methods for Practitioner Engineers.”**

Change course description to:

"The course focuses on equipping students with the skills to carry out R&D projects while integrating advanced tools like AI in an ethical way in this rapidly changing landscape. The course remains flexible to accommodate evolving technologies and industry needs."

Reason: to adjust course content to students' academic needs, which also needs to be reflected in the title.

Changing Course Description:

EGEN 5100 Reinforced and Prestressed Concrete Design

Change course description to:

“Introduction to design of reinforced and prestressed concrete elements using CSA A23.3. Behaviour and design of beams, columns and slabs. Prestressed concrete concepts including flexural analysis, shear, deflections and prestress loss.”

Reason: to adjust course content to students' level and needs.

EGEN 5101 Design of Steel Structures

Change course description to:

“Introduction to CAN/CSA - S16, Design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, inelastic strength and stability. Design of tension members, axially loaded columns, beams, composite beams, plate girders, stability of structures and members.”

Reason: to adjust course content to students' level and needs.

EGEN 5102 Masonry Behaviour and Design

Change course description to:

“Introduction to design of reinforced masonry using CSA S304. Properties of masonry materials and assemblages. Behaviour and design of walls, beams and columns. Applications to low-rise construction.”

Reason: to adjust course content to students' level and needs.

EGEN 5104 Traffic Engineering

Change course description to:

“Traffic control devices, signal warrants, principles of signalized intersection design, signal timing and components, signal optimization and coordination, traffic delay estimation, actuated control, freeway access control.”

Reason: to adjust course content to students' level and needs.

EGEN 5105 Foundation Engineering

Change course description to:

“Review of methods of estimating the shear strength of soils; use of in-situ testing for design purposes; Bearing capacity and performance of shallow and deep foundations; pile groups.”

Reason: to adjust course content to students' level and needs.

EGEN 5106 Fundamentals of Fire Safety Engineering

Change course description to:

“Explores the fire safety system, covering performance-based design, heat transfer, fire development, active fire protection systems, evacuation, life hazard assessment, wildland fires, fire investigation, and fire risk analysis. Compliance with building codes and standards is integrated.”

Reason: to adjust course content to students' level and needs.

EGEN 5107 Design for Fire Resistance

Change course description to:

“Fire Safety in Buildings, Fire and Heat, Compartment fires; Pre and post flashover fires; Design fires; Behaviour of materials and structures at elevated temperatures; fire-resistance tests; fire-resistance ratings; building code requirements; real-world fires; assessing the fire resistance of steel, concrete and wood building assemblies.”

Reason: to adjust course content to students' level and needs.

EGEN 5203 Test-driven and Agile Software Development

Change course description to:

"Practice of object-oriented design principles, design patterns, object-oriented frameworks, refactoring, unit-testing, test-driven development, Agile software development principles."

Reason: the course description (focus on testing and quality assurance) was not in line with the title of the course (focus on agile software development). In addition, the course will be scheduled in a lab (with a cap on student sections to fit them in a lab) to reflect focus on practice.

EGEN 5206 Web and Mobile Software Development

Change course description to:

"Developing web and mobile applications. Topics include: client-side/mobile programming language, development tools, graphical user interface patterns (e.g., event-driven programming, separation of content and presentation, layout policies) and framework, interactions with the server-side."

Reason: previous description was overly reliant on specific tech stack; new description will allow instructor a choice of stack and tools: e.g., Android, IOS or React Native. This should also make it less challenging to find an instructor to teach this course. In addition, the course be scheduled in a lab, given the practical nature of the course.

*Note: the proposed changes have been implemented into 2023-2024 Academic Calendar.

Rationale: changes were proposed as an update/correction given the resource, teaching, and student implications of not changing it.

EGEN 5302 Modeling and Simulation of Electrical Circuits

Change course description to:

“Basic principles of Computer-Aided Design tools used for analysis and design of VLSI circuits and systems. Automated formulation of circuit equations, Frequency, DC and time-domain analysis. Noise and distortion analysis. Interconnect analysis. Sensitivity analysis, and circuit performance optimization.”

Reason: to adjust course content to students' level and needs.

EGEN 5304 Microprocessor Systems

Change course description to:

“Interfacing aspects in microprocessor systems. Microprocessors and bus structures, internal architecture, instruction set and pin functions. Memory interfacing, input-output, interrupts, direct memory accesses, special processors and multiprocessor systems.”

Reason: to adjust course content to students' level and needs.

EGEN 5307 Control Systems and Robotics

Change course description to:

“Fundamental aspects of modeling and control of robot manipulators as devices that involve electronics and mechanics (kinematics and dynamics), electronic actuators, information theory, automation. Principles of proximity, tactile, and force sensing. Programming platforms and languages. Automation strategies.”

Reason: to adjust course content to students' level and needs.

Adding New Courses:

Special Topics Courses: They are centered around a chosen subject matter or content as indicated by that course's title and description.

EGEN 5199 – Special Topics in Civil Engineering

The course tackles specific issues within the field of civil engineering that may not be covered by existing approved courses.

EGEN 5299 – Special Topics in Software Engineering

The course tackles specific issues within the field of software engineering that may not be covered by existing approved courses.

EGEN 5399 – Special Topics in Electrical Engineering

EGEN 5499 – Special Topics in Environmental Engineering

The course tackles specific issues within the field of environmental engineering that may not be covered by existing approved courses.

EGEN 5599 – Special Topics in Mechanical Engineering

The course tackles specific issues within the field of mechanical engineering that may not be covered by existing approved courses.

EGEN 5208 Databases for Software Engineers.

“The relational database model and its logical underpinnings, mapping requirements to a database schema, the Entity-Relationship model, normalization, joins, SQL, indexes and views, transactions, object-relational mapping, migrations, noSQL databases.”

EGEN 5209 Tools for Software Engineering

“Proficiency with everyday software engineering tools: the command line, shell tools and scripting, text processing (regular expressions, grep, sed, awk), basic text editors (vim), graphing (gnuplot/matplotlib, graphviz), version control (git), networking tools (telnet, ssh, scp, curl), build and package management tools (make, apt-get).”

EGEN 5210 Practical Introduction to Data Analysis and Machine Learning

“Tabular data exploration and visualization (pandas, matplotlib), data-fitting basics (scikit-learn), k-nearest neighbours, linear regression, decision trees, data pre-processing, model evaluation metrics, overfitting vs underfitting, bias/variance, cross-validation, introduction to neural networks, hyperparameter tuning, feature selection, feature importance.”

EGEN 5308 Integrated Circuit and Device Technology

“Survey of technology used in silicon VLSI integrated circuit fabrication. Crystal growth and crystal defects, oxidation, diffusion, ion implantation and annealing, gettering, CVD, etching, materials for metallization and contacting, and photolithography. Structures and fabrication techniques required for submicron MOSFETs. Applications in advanced CMOS processes.”

EGEN 5509 Engineering Vibrations

“Vibration analysis of free-response damped and undamped single-degree-of-freedom (SDOF) systems. Harmonic excitation and general forced response. The eigenvalue problem and modal analysis for multi-degree-of-freedom (MDOF) systems. Vibration isolation and suppression. Distributed parameter systems. Analytical and Numerical methods.”

ECMP 5010 “Professional and Ethical Practice for Engineers”

In this course students will explore the Professional Engineers Act, professional ethics and responsibilities, and the interplay between engineering and society, with a focus on health and safety, environmental stewardship, sustainability, and effective communication skills.

EWEX 5000 Engineering Practicum Preparation

Mandatory course for the Engineering Practice Practicum pathway. Introduces students to the Engineering Practicum terms, job search, application, and interview processes while preparing students for the transition from university to a professional work environment. Graded SAT/UNSAT.

EWEX 5001 Engineering Practicum

Students must be enrolled in this course during their first practicum term. A written report from the student and an assessment from the employer will be required. Graded SAT/UNS.

EWEX 5002 Engineering Practicum

Students must be enrolled in this course during their first practicum term. A written report from the student and an assessment from the employer will be required. Graded SAT/UNS.

Deleting Courses:**EGEN 5207 Quantum Computing**

Reasons:

- students admitted to this program will not have the necessary background for this course;
- the content of this course does not align with their career objectives and the rest of the program;
- it will be challenging to find an instructor to teach this course.

EGEN 5204 In-memory and Stream Computing

Reasons:

- the content of this course does not align with their career objectives and the rest of the program;
- it will be challenging to find an instructor to teach this course.

2. The Rationale for Curriculum Changes

The proposed Program's modifications involve: i) changing course titles, ii) changing course descriptions, iii) adding new courses, and iv) deleting courses.

Changes in course titles and course descriptions were prompted by the necessity to better reflect course descriptions and course content, respectively.

Proposal of new courses was informed by the results of an informal student survey, which was completed by 86% of the EP students in September 2023. The survey results revealed students' heightened interest in the courses that the Program was not offering at that time. To respond to students' academic needs and interests, we propose adding these courses to the EP program.

Special Topics Courses are being introduced to tackle specific issues within a particular field of study that may not be covered by existing approved courses. Additionally, they may also be used to assess interest in potential new courses or areas of study.

As stated above, the main reasons for deleting EGEN 5207 and EGEN 5204 are challenges with finding instructors to teach these courses as well as the fact that the content of the courses may not align well with students' career objectives. In addition, students may not have necessary background for a course on Quantum Computing (EGEN 5207).

3. Impact on Other Programs

There is no direct impact on other programs, as far as we can tell. The courses are restricted to the EP students.

4. Impact on Learning Outcomes and Curriculum Map

Because the proposed changes pertain to 12 courses that are already offered by the EP Program, these changes augment, rather than change, the basic structure and focus of the existing learning outcomes.

Regarding the proposed new courses, their objectives and learning outcomes are the following:

EGEN 5208 Databases for Software Engineers

Course Description:

The relational database model and its logical underpinnings, mapping requirements to a database schema, the Entity-Relationship model, normalization, joins, SQL, indexes and views, transactions, object-relational mapping, migrations, noSQL databases.

Prerequisites:

Enrolment in the M.Eng.- Engineering Practice program and an undergraduate degree in Computer or Software Engineering or permission of the Director.

Objectives:

Students will learn how to create, maintain and query a database.

Learning Outcomes:

Working knowledge of SQL, ability to model a database schema.

Course Outline:

- foundations: set theory, relational logic
- entity-relationship model
- relational database design, normalization
- SQL

- indexes and views
- transactions
- object-relational mapping tools (ORM)
- database migrations
- noSQL databases

Reason: to respond to students' requests on an informal students' survey.

EGEN 5209 Tools for Software Engineering

Course Description:

Proficiency with everyday software engineering tools: the command line, shell tools and scripting, text processing (regular expressions, grep, sed, awk), basic text editors (vim), graphing (gnuplot/matplotlib, graphviz), version control (git), networking tools (telnet, ssh, scp, curl), build and package management tools (make, apt-get).

Prerequisites:

Enrolment in the M.Eng.- Engineering Practice program and an undergraduate degree in Computer or Software Engineering or permission of the Director.

Objectives:

Students will learn to use everyday software engineering tools.

Learning Outcomes:

Proficiency with common command line tools.

Course Outline:

- the command line
- shell tools and scripting (bash)
- text processing (regular expressions, grep, sed, awk)
- basic text editors (vim)
- graphing (gnuplot/matplotlib, graphviz)
- version control (git)
- networking tools (telnet, ssh, scp, curl)
- build and package management tools (make, apt-get)

Reason: to respond to students' requests on an informal students' survey.

EGEN 5210 Practical Introduction to Data Analysis and Machine Learning

Course Description:

Tabular data exploration and visualization (pandas, matplotlib), data-fitting basics (scikit-learn), k-nearest neighbours, linear regression, decision trees, data pre-processing, model evaluation metrics, overfitting vs underfitting, bias/variance, cross-validation, introduction to neural networks, hyperparameter tuning, feature selection, feature importance.

Prerequisites:

Enrolment in the M.Eng.- Engineering Practice program and an undergraduate degree in Computer or Software Engineering or permission of the Director.

Objectives:

Students will learn the basics of machine learning and data analysis.

Learning Outcomes:

Students will be able to analyze data and create and interpret simple machine learning models.

Course Outline:

- tabular data exploration and visualization (pandas, matplotlib),
- data-fitting basics (scikit-learn),
- k-nearest neighbours,
- linear regression,
- decision trees,
- data pre-processing,
- model evaluation metrics, overfitting vs underfitting, bias/variance, cross-validation,
- introduction to neural networks,
- hyperparameter tuning,
- feature selection,
- feature importance.

Reason: to respond to students' requests on an informal students' survey.

EGEN 5308 [0.5 credit] Integrated Circuit and Device Technology

Course Description:

Survey of technology used in silicon VLSI integrated circuit fabrication. Crystal growth and crystal defects, oxidation, diffusion, ion implantation and annealing, gettering, CVD, etching, materials for metallization and contacting, and photolithography. Structures and fabrication techniques required for submicron MOSFETs. Applications in advanced CMOS processes.

Course summary:

The course will provide an overview of modern VLSI device and fabrication technology which will be supported by use of device simulation tools.

Part A: Overview of Device Physics and Design

Part B: Detailed Silicon Process techniques

Part C: The Future of CMOS

Part D: Special Topics

There are several well-known reference textbooks available. Assessment will be through term assignments and a final examination.

Prerequisite(s):

Enrolment in the M.Eng.- Engineering Practice program and an undergraduate degree in Electrical Engineering or permission of the Director.

Course Objectives:

A balanced program in Electrical Engineering should incorporate training in electronic materials, devices, and fabrication. With the introduction of the CHIPS act in the US and a commitment to re-establish semiconductor manufacturing in North America, there is likely to be a resurgence in semiconductor jobs in coming years. This course will help prepare students for this market. We are adding this course to the calendar now in anticipation of future demand.

Learning Outcomes:

The course is intended to provide an overview of modern VLSI fabrication technologies, primarily to inform IC designers working through foundries.

By the end of the course students will be able to design and simulate a process flow for a simple semiconductor device.

EGEN 5509 Engineering Vibrations

Course Description:

Vibration analysis of free-response damped and undamped single-degree-of-freedom (SDOF) systems. Harmonic excitation and general forced response. The eigenvalue problem and modal analysis for multi-degree-of-freedom (MDOF) systems. Vibration isolation and suppression. Distributed parameter systems. Analytical and Numerical methods.

Course summary:

Vibration is the study of the repetitive motion of objects relative to a stationary frame of reference or nominal position (usually equilibrium). Vibration is evident everywhere, and in many cases greatly affects the nature of engineering designs. EGEN 55xx Engineering Vibrations delves into the dynamic behavior of mechanical systems. This course emphasizes principles and techniques necessary for understanding and analyzing vibrations. Students explore both theoretical concepts and practical applications. Topics covered include an introduction to vibration and free response, harmonic motion, viscous damping, energy methods, stiffness, measurement techniques, design considerations, stability analysis, numerical simulation,

response to harmonic excitation, general forced response, multiple-degree-of-freedom systems, modal analysis, vibration suppression design, and distributed parameter systems. Practical skills in vibration analysis, system design, and simulation prepare students for real-world engineering challenges.

Prerequisites:

Enrolment in the M.Eng.- Engineering Practice program and an undergraduate degree in Mechanical Engineering or permission of the Director.

Rigid body dynamics (MAAE 2101 equivalent, see academic calendar for more information)

Ordinary Differential Equations (Calculus)

Linear Algebra/Matrix Algebra

Foundations in Programming or Numerical Methods

Course Objectives:

This course delves into the dynamic behavior of mechanical systems, emphasizing the principles and techniques necessary for understanding and analyzing vibrations.

Learning Outcomes:

At the end of the course, students will be able to:

- understand the principles of harmonic motion, its mathematical representation, and how it applies to mechanical systems.
- explore how viscous damping influences system behavior, including damping ratios and their impact on natural frequencies.
- learn energy-based techniques for analyzing vibrations, including the conservation of energy and Rayleigh's method.
- investigate the relationship between stiffness and natural frequencies in vibrating systems.
- gain an understanding of capturing vibration data using various measurement tools and sensors.
- understand how to mitigate unwanted vibrations through thoughtful engineering design, including material selection and structural modifications.
- study stability criteria for vibrating systems, including resonance avoidance and critical speeds.
- explore numerical simulation methods (such as Euler Method) for predicting dynamic responses in vibrating structures.

ECMP 5010 “Professional and Ethical Practice for Engineers”

Course Description:

In this course students will explore the Professional Engineers Act, professional ethics and responsibilities, and the interplay between engineering and society, with a focus on health and safety, environmental stewardship, sustainability, and effective communication skills.

Course Summary:

This course explores the professional and ethical responsibilities of engineers, with discussions to adapting to current industry challenges and emerging technologies. With the core of the course focused on integrity and respect in the Canadian Engineering workplace, students will address ethical challenges and societal challenges and opportunities posed by areas such as ever-expanding AI adoption, sustainability, technology, public safety, and legal and professional obligations, and/or other relevant topics. They will explore how engineers maintain public safety, environmental responsibility, and fairness in all professional relationships. Integrity in decision-making and respect for all stakeholders are central themes, ensuring that engineers uphold the highest standards in their work and interactions. The course evolves with emerging ethical challenges and professional practice issues, keeping pace with changes in industry standards, regulatory frameworks, and/or other relevant areas.

Prerequisites:

Enrolment in the M.Eng.- Engineering Practice program.

Course Objectives: Students will gain a strong understanding of how to aspire toward professional practices, and how to handle ethical challenges in engineering, adapting to specific sectors or issues such as environmental sustainability, AI, corporate accountability, or public safety. The course prepares students to navigate legal and regulatory requirements (including licensure for graduates of non-accredited engineering programs), make ethical decisions, and promote respect, fairness, and responsibility in their professional interactions. The content addresses current or emerging challenges in professional practice and/or other relevant areas.

Learning Outcomes:

Students will learn about:

- Demonstrating respect and fairness in all professional interactions, adapting to specific workplace challenges.
- Upholding integrity in decision-making, ensuring the safety, health, and welfare of the public.
- Evaluating the ethical implications of emerging technologies in engineering practice, such as AI, blockchain, or automation, and/or other timely topics.
- Understanding and applying regulatory frameworks and professional standards.
- Promoting sustainability and environmental stewardship in engineering projects.
- Resolving ethical dilemmas while maintaining accountability and respect for diverse perspectives.
- Navigating professional licensing requirements and contributing to the engineering profession with a commitment to ethical excellence.
- Adapting to new ethical challenges related to data privacy, cybersecurity, and the responsible use of AI and/or other emerging technologies.

Course Outline:

- Integrity and accountability in engineering,
- Public safety and fairness,
- Environmental responsibility,
- Respect in the engineering profession,
- Regulatory compliance
- Ethical challenges of AI and automation,
- Professional licensing,
- Canadian job market,
- Data privacy, and fostering respect in a diverse workplace,
- And/or other relevant topics.

Reason: to respond to students' academic interests and needs.

7. Societal Need

N/a

8. Students

As noted above, we are proposing the new courses based on the results of an informal student survey, conducted by the EP Program in September 2023. In response to students' requests, the EP Program will offer the courses that were mentioned most frequently and align well with resources currently available at FED's departments that teach these courses. In this way, the EP Program is striving to accommodate its students' academic needs and interests.

9. Resources

No new faculty members are required to implement the proposed changes, including the proposed new courses because the departments that will manage these courses already have the expertise across its faculty. In general, offering the new courses is within the department's resource envelope.

The administrative support already exists. The library holdings are already sufficient and appropriate. No additional space or equipment is required.

Program Change Request

Date Submitted: 10/24/24 3:35 pm

Viewing: **TBD-2132 : M. Engineering - Engineering Practice**

Last approved: 10/04/24 2:52 pm

Last edit: 02/12/25 9:26 am

Last modified by: nataliephelan

Changes proposed by: OlenaSivachenko

In Workflow

1. FED ChairDir GR

2. ENG GFCC

3. ENG FBoard

4. FED ChairDir GR

5. ENG GFCC

6. ENG FBoard

7. PRE SCCASP

8. SCCASP

9. SQAPC

10. CalEditor

Approval Path

1. 10/24/24 3:47 pm
Prashant Waghmare
(PrashantWaghmare):
Approved for FED
ChairDir GR

2. 11/04/24 3:42 pm
Richard Dansereau
(richarddansereau):
Approved for ENG GFCC

3. 11/29/24 11:21 am
Richard Dansereau
(richarddansereau):
Approved for ENG
FBoard

4. 12/11/24 9:05 am
Prashant Waghmare
(PrashantWaghmare):
Approved for FED
ChairDir GR

5. 02/19/25 12:43 pm
Richard Dansereau
(richarddansereau):
Approved for ENG GFCC

6. 02/24/25 3:56 pm
Richard Dansereau
(richarddansereau):
Approved for ENG
FBoard

History

1. Jan 26, 2023 by Sandra
Bauer (sandrabauer)

2. Jul 19, 2023 by Sandra
Bauer (sandrabauer)

3. Oct 4, 2024 by Natalie
Phelan (nataliephelan)

Calendar Pages Using this Program		Engineering Practice
Effective Date	2025-26	
Workflow	majormod minormod	
Program Code	TBD-2132	
Level	Graduate	
Faculty	Faculty of Engineering and Design	
Academic Unit	Engineering & Design (Faculty of)	
Degree	Master of Engineering	
Title	M. Engineering - Engineering Practice	

Program Requirements

Master of Engineering - Engineering Practice (5.0 credits - coursework pathway) (5.25 credits - practicum pathway) ~~credits~~

Master of Engineering - Civil Engineering Practice

Requirements - coursework pathway (5.0 credits)

1. 2.0 credits from:		2.0
EGEN 5100 [0.5]	Reinforced and Prestressed Concrete Design	
EGEN 5101 [0.5]	Design of Steel Structures	
EGEN 5102 [0.5]	Masonry Behaviour and Design	
EGEN 5103 [0.5]	Infrastructure and Pavement Management	
EGEN 5104 [0.5]	Traffic Engineering	
EGEN 5105 [0.5]	Foundation Engineering	
EGEN 5106 [0.5]	Fundamentals of Fire Safety Engineering	
EGEN 5107 [0.5]	Design for Fire Resistance	
EGEN 5199 [0.0]	Special Topics in Civil Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 1.5 credits from:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
6. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.0

Master of Engineering - Civil Engineering Practice

Requirements - practicum pathway (5.25 credits)

1. 2.0 credits from:		2.0
EGEN 5100 [0.5]	Reinforced and Prestressed Concrete Design	
EGEN 5101 [0.5]	Design of Steel Structures	
EGEN 5102 [0.5]	Masonry Behaviour and Design	
EGEN 5103 [0.5]	Infrastructure and Pavement Management	
EGEN 5104 [0.5]	Traffic Engineering	
EGEN 5105 [0.5]	Foundation Engineering	
EGEN 5106 [0.5]	Fundamentals of Fire Safety Engineering	
EGEN 5107 [0.5]	Design for Fire Resistance	
EGEN 5199 [0.0]	Special Topics in Civil Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of the program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 0.25 credit in:		0.25
EWEX 5000 [0.0]	Engineering Practicum Preparation	
6. 1.5 credits from the following list, which must include at least one of EWEX 5001 or EWEX 5002:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
EWEX 5001 [0.0]	Engineering Practicum	
EWEX 5002 [0.0]	Engineering Practicum	
7. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.25

Master of Engineering - Software Engineering Practice

Requirements - coursework pathway (5.0 credits)

1. 2.0 credits from:		2.0
EGEN 5200 [0.5]	Operating Systems	
EGEN 5201 [0.5]	Embedded Systems Development	
EGEN 5202 [0.5]	Secure Systems Engineering	
EGEN 5203 [0.5]	Test-driven and Agile Software Development	

EGEN 5204 [0.0]	Course EGEN 5204 Not Found	
EGEN 5205 [0.5]	Software Development for Parallel and Distributed Architectures	
EGEN 5206 [0.5]	Web and Mobile Software Development	
EGEN 5207 [0.0]	Course EGEN 5207 Not Found	
EGEN 5208 [0.0]	<u>Databases for Software Engineers</u>	
EGEN 5209 [0.0]	<u>Tools for Software Engineering</u>	
EGEN 5210 [0.0]	<u>Practical Introduction to Data Analysis and Machine Learning</u>	
EGEN 5299 [0.0]	<u>Special Topics in Software Engineering</u>	
EGEN 5099 [0.5]	Directed Studies (with permission of program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 1.5 credits from:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	<u>Professional and Ethical Practice for Engineers</u>	
6. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.0
<u>Master of Engineering - Software Engineering Practice</u>		
<u>Requirements - practicum pathway (5.25 credits)</u>		
1. 2.0 credits from:		<u>2.0</u>
EGEN 5200 [0.5]	<u>Operating Systems</u>	
EGEN 5201 [0.5]	<u>Embedded Systems Development</u>	
EGEN 5202 [0.5]	<u>Secure Systems Engineering</u>	
EGEN 5203 [0.5]	<u>Test-driven and Agile Software Development</u>	
EGEN 5205 [0.5]	<u>Software Development for Parallel and Distributed Architectures</u>	
EGEN 5206 [0.5]	<u>Web and Mobile Software Development</u>	
EGEN 5208 [0.0]	<u>Databases for Software Engineers</u>	
EGEN 5209 [0.0]	<u>Tools for Software Engineering</u>	
EGEN 5210 [0.0]	<u>Practical Introduction to Data Analysis and Machine Learning</u>	
EGEN 5299 [0.0]	<u>Special Topics in Software Engineering</u>	
EGEN 5099 [0.5]	<u>Directed Studies (with permission of the program director only, and support of a full-time faculty member)</u>	
2. 0.5 credit in:		<u>0.5</u>
ECMP 5000 [0.5]	<u>Engineering Communications</u>	
3. 0.5 credit in:		<u>0.5</u>
ECMP 5001 [0.5]	<u>Project Management</u>	
4. 0.5 credit in:		<u>0.5</u>
ECMP 5002 [0.5]	<u>Research Methods for Engineering Practitioners</u>	
5. 0.25 credit in:		<u>0.25</u>
EWEX 5000 [0.0]	<u>Engineering Practicum Preparation</u>	
6. 1.5 credits from the following list, which must include at least one of EWEX 5001 or EWEX 5002:		<u>1.5</u>
ECMP 5003 [0.5]	<u>Entrepreneurship</u>	
ECMP 5004 [0.5]	<u>Engineering Economics</u>	
ECMP 5005 [0.5]	<u>Data Analytics</u>	
ECMP 5006 [0.5]	<u>Governance, Policy Development and Decision-making</u>	
ECMP 5007 [0.5]	<u>Climate Change and Sustainability</u>	
ECMP 5008 [0.5]	<u>Risk Analysis</u>	
ECMP 5010 [0.0]	<u>Professional and Ethical Practice for Engineers</u>	
EWEX 5001 [0.0]	<u>Engineering Practicum</u>	
EWEX 5002 [0.0]	<u>Engineering Practicum</u>	
7. 0.0 credit in:		
ECMP 5009 [0.0]	<u>Research Seminar</u>	
Total Credits		5.25
<u>Master of Engineering - Electrical Engineering Practice</u>		
<u>Requirements - coursework pathway (5.0 credits)</u>		
1. 2.0 credits from:		2.0
EGEN 5300 [0.5]	Signal Processing Electronics	
EGEN 5301 [0.5]	VLSI Design	
EGEN 5302 [0.5]	Modeling and Simulation of Electrical Circuits	
EGEN 5303 [0.5]	Silicon Sensors	
EGEN 5304 [0.5]	Microprocessor Systems	
EGEN 5305 [0.5]	Power Systems	
EGEN 5306 [0.5]	Telecommunications Systems	

EGEN 5307 [0.5]	Control Systems and Robotics	
EGEN 5308 [0.0]	Integrated Circuit and Device Technology	
EGEN 5399 [0.0]	Special Topics in Electrical Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 1.5 credits from:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
6. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.0
Master of Engineering - Electrical Engineering Practice		
Requirements - practicum pathway (5.25 credits)		
1. 2.0 credits from:		2.0
EGEN 5300 [0.5]	Signal Processing Electronics	
EGEN 5301 [0.5]	VLSI Design	
EGEN 5302 [0.5]	Modeling and Simulation of Electrical Circuits	
EGEN 5303 [0.5]	Silicon Sensors	
EGEN 5304 [0.5]	Microprocessor Systems	
EGEN 5305 [0.5]	Power Systems	
EGEN 5306 [0.5]	Telecommunications Systems	
EGEN 5307 [0.5]	Control Systems and Robotics	
EGEN 5308 [0.0]	Integrated Circuit and Device Technology	
EGEN 5399 [0.0]	Special Topics in Electrical Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of the program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 0.25 credit in:		0.25
EWEX 5000 [0.0]	Engineering Practicum Preparation	
6. 1.5 credits from the following list, which must include at least one of EWEX 5001 or EWEX 5002:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
EWEX 5001 [0.0]	Engineering Practicum	
EWEX 5002 [0.0]	Engineering Practicum	
7. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.25
Master of Engineering - Environmental Engineering Practice		
Requirements - coursework pathway (5.0 credits)		
1. 2.0 credits from:		2.0
EGEN 5400 [0.5]	Overview of Environmental Engineering Principles	
EGEN 5401 [0.5]	Physico-Chemical Processes in Water and Wastewater Treatment	
EGEN 5402 [0.5]	Biological Processes in Water and Wastewater Treatment	
EGEN 5403 [0.5]	Groundwater and Soil Remediation	
EGEN 5404 [0.5]	Solid Wastes and Landfill	
EGEN 5405 [0.5]	Air Pollution and Emission Control	
EGEN 5406 [0.5]	Climate Change and Engineering	
EGEN 5407 [0.5]	Environmental Impact Assessment	
EGEN 5499 [0.0]	Special Topics in Environmental Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	

3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 1.5 credits from:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
6. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.0

[Master of Engineering - Environmental Engineering Practice](#)

[Requirements - practicum pathway \(5.25 credits\)](#)

1. 2.0 credits from:		2.0
EGEN 5400 [0.5]	Overview of Environmental Engineering Principles	
EGEN 5401 [0.5]	Physico-Chemical Processes in Water and Wastewater Treatment	
EGEN 5402 [0.5]	Biological Processes in Water and Wastewater Treatment	
EGEN 5403 [0.5]	Groundwater and Soil Remediation	
EGEN 5404 [0.5]	Solid Wastes and Landfill	
EGEN 5405 [0.5]	Air Pollution and Emission Control	
EGEN 5406 [0.5]	Climate Change and Engineering	
EGEN 5407 [0.5]	Environmental Impact Assessment	
EGEN 5499 [0.0]	Special Topics in Environmental Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of the program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 0.25 credit in:		0.25
EWEX 5000 [0.0]	Engineering Practicum Preparation	
6. 1.5 credits from the following list, which must include at least one of EWEX 5001 or EWEX 5002:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
EWEX 5001 [0.0]	Engineering Practicum	
EWEX 5002 [0.0]	Engineering Practicum	
7. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.25

Master of Engineering - Mechanical Engineering Practice

[Requirements - coursework pathway \(5.0 credits\)](#)

1. 2.0 credits from:		2.0
EGEN 5500 [0.5]	Applied Fluid Mechanics	
EGEN 5501 [0.5]	Computational Fluid Mechanics	
EGEN 5502 [0.5]	Thermodynamics and Energy Systems	
EGEN 5503 [0.5]	Transport Phenomena (Heat and Mass)	
EGEN 5504 [0.5]	Kinematics and Dynamics of Human Movement	
EGEN 5505 [0.5]	Controls and Robotics	
EGEN 5506 [0.5]	Mechanics and Fracture	
EGEN 5507 [0.5]	Surfaces and Interfacial Phenomena	
EGEN 5508 [0.5]	Introduction to Advanced Materials	
EGEN 5509 [0.0]	Engineering Vibrations	
EGEN 5599 [0.0]	Special Topics in Mechanical Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 1.5 credits from:		1.5

ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
6. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.0
Master of Engineering - Mechanical Engineering Practice		
Requirements - practicum pathway (5.25 credits)		
1. 2.0 credits from:		2.0
EGEN 5500 [0.5]	Applied Fluid Mechanics	
EGEN 5501 [0.5]	Computational Fluid Mechanics	
EGEN 5502 [0.5]	Thermodynamics and Energy Systems	
EGEN 5503 [0.5]	Transport Phenomena (Heat and Mass)	
EGEN 5504 [0.5]	Kinematics and Dynamics of Human Movement	
EGEN 5505 [0.5]	Controls and Robotics	
EGEN 5506 [0.5]	Mechanics and Fracture	
EGEN 5507 [0.5]	Surfaces and Interfacial Phenomena	
EGEN 5508 [0.5]	Introduction to Advanced Materials	
EGEN 5509 [0.0]	Engineering Vibrations	
EGEN 5599 [0.0]	Special Topics in Mechanical Engineering	
EGEN 5099 [0.5]	Directed Studies (with permission of the program director only, and support of a full-time faculty member)	
2. 0.5 credit in:		0.5
ECMP 5000 [0.5]	Engineering Communications	
3. 0.5 credit in:		0.5
ECMP 5001 [0.5]	Project Management	
4. 0.5 credit in:		0.5
ECMP 5002 [0.5]	Research Methods for Engineering Practitioners	
5. 0.25 credit in:		0.25
EWEX 5000 [0.0]	Engineering Practicum Preparation	
6. 1.5 credits from the following list, which must include at least one of EWEX 5001 or EWEX 5002:		1.5
ECMP 5003 [0.5]	Entrepreneurship	
ECMP 5004 [0.5]	Engineering Economics	
ECMP 5005 [0.5]	Data Analytics	
ECMP 5006 [0.5]	Governance, Policy Development and Decision-making	
ECMP 5007 [0.5]	Climate Change and Sustainability	
ECMP 5008 [0.5]	Risk Analysis	
ECMP 5010 [0.0]	Professional and Ethical Practice for Engineers	
EWEX 5001 [0.0]	Engineering Practicum	
EWEX 5002 [0.0]	Engineering Practicum	
7. 0.0 credit in:		0.0
ECMP 5009 [0.0]	Research Seminar	
Total Credits		5.25

New Resources	No New Resources
Summary	1) Removed deleted courses EGEN 5204 and EGEN 5207. 2) Added multiple new course options to all EP streams. 3) Created a new Engineering Work Experience pathway; added new course options (EWEX 5000, 5001, 5002)
Rationale for change	1) Deleting EGEN 5204 and 5207: It will be challenging to find an instructor to teach these courses. Also, the content of the deleted courses does not align with students' career objectives and the rest of the program. To address this, we have started a number new courses that align better with students' academic needs and career objectives. 2) New courses added to all streams: These courses have been added to better align with students' academic needs, interests as well as their career objectives. 3) Introducing work experience pathways: This pathway will attract prospective students to the EP program and expand their academic opportunities by: accelerating integration into the Canadian workforce, enhancing networking and mentorship opportunities, training industry-ready professionals, strengthening employer partnerships and feedback, improving graduate outcomes and program success.
Transition/Implementation	The new courses can be taken by the existing students towards their degree.
Program reviewer comments	nataliephelan (01/31/25 9:28 am): EGEN 5102 added to Civil stream work experience pathway - omitted in error. nataliephelan (02/11/25 12:03 pm): Per D. Hornsby, changed language to say "practicum" where previously "work experience" was used.

2/25/25, 11:38 AM

EWEX 5001: Engineering Practicum

Grade Mode	Satisfactory/Unsatisfactory
Schedule Type	*Practicum
	*May constitute a major modification under Carleton’s IQAP. Please consult https://carleton.ca/viceprovost/major-minor-modifications/ for more details.
Unpaid Placement	No
Summary	Creation of a course code for the new Engineering Practice (EP) program's engineering practicum pathway.
Rationale for new course	The EP program is introducing a new engineering practicum pathway, providing all students across various streams with a single unified course code for registration.
Course reviewer comments	nataliephelan (01/31/25 9:58 am): Following ENG GFCC, wording changed in course description. nataliephelan (02/11/25 12:01 pm): Per D. Hornsby, changed language to say "practicum" where previously "work experience" was used.

Key: 11235

[Preview Bridge](#)

2/25/25, 11:39 AM

EWEX 5002: Engineering Practicum

Grade Mode	Satisfactory/Unsatisfactory
Schedule Type	*Practicum
	*May constitute a major modification under Carleton’s IQAP. Please consult https://carleton.ca/viceprovost/major-minor-modifications/ for more details.
Unpaid Placement	No
Summary	Creation of a course code for the new Engineering Practice (EP) program's engineering practicum pathway.
Rationale for new course	The EP program is introducing a new engineering practicum pathway, providing all students across various streams with a single unified course code for registration.
Course reviewer comments	nataliephelan (01/31/25 10:03 am): Following ENG GFCC, description wording so it aligns with EWEX 5001, and prerequisite changed. nataliephelan (02/11/25 12:01 pm): Per D. Hornsby, changed language to say "practicum" where previously "work experience" was used. nataliephelan (02/19/25 4:22 pm): Corrected typo in description.

Key: 11238

[Preview Bridge](#)

Course Change Request

A deleted record cannot be edited

Course Delete Proposal

Date Submitted: 09/30/24 1:48 pm

Viewing: **ERTH 4910 : Honours Thesis in Resource Evaluation**

Last approved: 02/25/19 3:11 am

Last edit: 12/13/24 11:04 am

Changes proposed by: sheilathayer

Calendar Pages referencing this course	Earth Sciences Earth Sciences (ERTH).
Other Courses referencing this course	<u>In the Precludes Credit Statement:</u> ERTH 4908 : Honours Thesis ERTH 4909 : Research in Earth Sciences

In Workflow

1. **ERTH ChairDir UG**
2. **SCI FCC**
3. **SCI FBoard**
4. **PRE SCCASP**
5. SCCASP
6. SQAPC
7. Senate
8. PRE CalEditor
9. Banner

Approval Path

1. 10/01/24 3:06 pm
Tim Patterson
(timpatterson): Approved for ERTH ChairDir UG
2. 10/31/24 11:29 am
Maria Doria
(mariadoria): Approved for SCI FCC
3. 12/04/24 2:38 pm
Maria Doria
(mariadoria): Approved for SCI FBoard

History

1. Apr 10, 2015 by sandra
2. Mar 31, 2017 by Sarah Adams-Aston
(sarahadamsaston)
3. Feb 25, 2019 by Mike Labreque (mikelabreque)

Effective Date	2025-26
Workflow	majormod minormod
Level	Undergraduate
Course Code	ERTH
Course Number	4910
Title	Honours Thesis in Resource Evaluation
Title (short)	H Thesis Resource Evaluation

Faculty	Faculty of Science
Academic Unit	Department of Earth Sciences
Credit Value	1.0
Special/Selected Topics	
Significant Experiential Learning	Applied Research Project
Course Description	Independent studies: Analysis and interpretation of geological, environmental and/or financial data to determine economic value of a natural resource, and its viability for sustainable development. Requires approval of the supervisor and course coordinator. Oral and written proposal, progress and defense reports are required.
Prerequisite(s)	Restricted to B.Sc. Honours in Earth Sciences with Concentration in Finance: Resource Valuation. Major CGPA 8.5 or higher at time of registration for the course.
Class Format	
Precluded Courses	ERTH 4908 and ERTH 4909.

2/25/25, 12:14 PM		ERTH 4910: Honours Thesis in Resource Evaluation	
Also listed as			
Piggybacked Courses			
Grade Mode		Standard Letter Grade	
Schedule Type		Independent Study	
		*May constitute a major modification under Carleton's IQAP. Please consult https://carleton.ca/viceprovost/major-minor-modifications/ for more details.	
Unpaid Placement		No	
Summary		Deletion of course	
Rationale for deactivation		Deletion of course due to program deletion	
Course reviewer comments		angelwagner (12/13/24 11:04 am): Changed to major modification as per request from R. Green.	
		Key: 8458	
		Preview Bridge	

Program Change Request

Date Submitted: 09/08/24 11:37 am

Viewing: **TBD-1472 : Communication PhD Comprehensive Examinations statement**

Last approved: 05/03/17 1:09 pm

Last edit: 01/13/25 8:57 am

Last modified by: nataliephelan

Changes proposed by: benjaminwoo

In Workflow

- 1. COMM ChairDir GR
- 2. PA GFCC
- 3. PA FBoard
- 4. PRE SCCASP
- 5. SCCASP
- 6. SQAPC
- 7. Senate
- 8. CalEditor

Approval Path

- 1. 09/08/24 11:49 am
Benjamin Woo
(benjaminwoo):
Approved for COMM ChairDir GR
- 2. 09/18/24 6:23 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA GFCC
- 3. 10/08/24 12:18 pm
Vandna Bhatia
(vandnabhatia):
Approved for PA FBoard
- 4. 12/11/24 9:26 am
Natalie Phelan
(nataliephelan):
Approved for PRE SCCASP
- 5. 12/17/24 11:46 am
Erika Strathearn
(erikastrathearn):
Approved for SCCASP

History

- 1. May 4, 2016 by Sandra Bauer (sandrabauer)
- 2. May 3, 2017 by Sandra Bauer (sandrabauer)

Effective Date	2025-26
Workflow	<u>majormod</u> minormod
Program Code	TBD-1472
Level	Graduate
Faculty	Faculty of Public Affairs
Academic Unit	School of Journalism and Communication (COMM)
Degree	
Title	Communication PhD Comprehensive Examinations statement

Program Requirements

Comprehensive Examinations

In addition to their course requirements, doctoral students ~~candidates~~ are required to pass a ~~write two~~ comprehensive examination. ~~examinations each worth 1.0 credit. The first comprehensive examination (COMS 6900) is closely related to the course materials in the doctoral seminar (COMS 6000) and is conducted by the instructors of COMS 6000 in May following completion of the seminar. To be eligible for the first comprehensive, candidates must have a GPA of 9.0 or higher on their previous course work, including COMS 6000. Students who fail the first comprehensive may be asked to withdraw from the program.~~ The ~~second~~ comprehensive examination tests ~~examination (COMS 6901) is normally completed during the second year of the program and tests the~~ student's in-depth knowledge of two fields within communication and media studies, one field of study. Fields to be examined are determined in consultation with their supervisor, with at least one being selected from a list pre-approved by the program. The exam consists of written answers to questions set ~~It is conducted~~ by the student's ~~student's~~ supervisor and advisory committee and ~~involves examination of an~~ oral defence. ~~approved project related to the chosen field.~~

Before taking the ~~second~~ comprehensive examination, students must have completed all ~~of their~~ course work and earned with a CGPA of ~~GPA of 9.0 or higher. higher and have satisfactorily completed COMS 6900.~~ The ~~second~~ comprehensive exam must be ~~expected to~~ be completed no later than ~~two years or~~ six terms after initial full-time registration, or 15 ~~four years or 12~~ terms after initial part-time registration. Students who do not fulfill this requirement within the prescribed time ~~period~~ may be asked to withdraw from the program.

New Resources	No New Resources
Summary	Revising text to reflect new format and timeline for comprehensive exam.
Rationale for change	We have completed a thorough review of the comprehensive exam requirements, including an environmental scan of other Canadian PhD programs in Communication Studies. In order to promote timely progression through the program, we are proposing modest changes to the comprehensive examination. Notably, there will now be a single exam with one format, comprising two distinct fields.
Transition/Implementation	Students already in the doctoral program when the new calendar comes into effect will have already completed at least one of the old comprehensive exams; therefore, they will not be permitted to transition to the new formats and program structure.
Program reviewer comments	vandnabhatia (09/12/24 6:28 pm): Slightly edited statement, in discussion with unit Director. nataliephelan (10/25/24 8:57 am): Per C. Noja, changed to majormod workflow.

nataliephelan (01/13/25 8:57 am): Following discussion at SQAPC: removed course codes to avoid confusion over two courses/one exam, and made a couple of stylistic edits to match overall calendar style.

Key: 1472