

Graduate Studies in ECE

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Chair, Graduate Studies Committee

Dept of Electrical and Computer Engineering

Royal Military College of Canada


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Outline

- Generic Information
- Information specific to Degree students
- Information specific to MASc students

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You should all care

GENERIC INFORMATION

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ECE GSC

- Programme Chair for all ECE graduate programmes:
 - Dr. Francis Okou, Head ECE
 - Assisted by Dr. Sylvain (Sly) Leblanc, Co-Associate Head (Graduate) ECE
 - Jocelyne Beaulieu, ECE Administration Officer
- ECE Graduate Studies Committee (GSC):
 - Dr. Sylvain (Sly) Leblanc, Chair
 - Dr. Aboelmagd Noureldin, Electrical Engineering Coordinator
 - Dr. Smain Amari, Computer Engineering Coordinator
 - M. Brian Lachine, Software Engineering/Cyber Security Coordinator
 - Dr. Mohamed Tarbouchi, PhD Comprehensive Exam Coordinator
- Major Role of the Committee
 - Admission Process
 - Review / Approve New Graduate Courses
 - Progress of Graduate Students
 - Organizing PhD Comprehensive Exams
 - Addressing PG student problems and concerns

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ECE Graduate Programmes & Specialties

- Graduate studies in Electrical and Computer Engineering:
 - PhD
 - MASc (Thesis-based)
 - MEng (Course-based)
 - No direct admission
 - Graduate Certificate in Cyber Security (GCCS)
 - Non-degree granting
 - Interdepartmental (with MBA & MPA)
 - Interest Only Students
- Major Research Area (<http://ece-rmc.ca/>, Graduate Research – Research Labs)
 - Communications
 - Computer Security (CSL)
 - Electronic Warfare & Radar (EWAR)
 - Image Processing
 - Navigation & Instrumentation (NavINST)
 - Power & Control
 - Robotics

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RMC Graduate Studies Calendar

<https://www.rmc-cmr.ca/en/registrars-office/graduate-studies-calendar>

- Graduate Students are responsible for abiding by the *Academic Regulations (AR)*

Academic Regulations for Graduate Studies

| | | |
|--|---|--|
| 5.1 Student Categories | 5.8 Required Courses versus Extra Courses | 5.15 Transfer Credit |
| 5.2 Study Status | 5.9 Course Auditing | 5.16 Credit Granted |
| 5.3 Registration | 5.10 Transcript Notations | 5.17 Academic Integrity |
| 5.4 Course Coding | 5.11 Grading Scheme | ◦ Academic Integrity Course Description |
| 5.5 Course Withdrawal | 5.12 Course Results | 5.18 Appeals, Re-reads and Petitions |
| 5.6 Programme Withdrawal | 5.13 Submission of Results | 5.19 Language of Instruction, Course Work and Examination, and Supervision |
| 5.7 Incomplete Courses | 5.14 Course Failures | |

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Programme Standing Leaves of Absences

- ❑ Your academic life is distinct from your other personas (especially the CAF)
 - Deployments, Leave
 - Career implications
- ❑ You must be in good standing to graduate and receive a degree
 - Every semester must be accounted for.
 - You will be required to request retroactive leave of absence (LOA) for semesters that are not covered
 - \$250/semesters administration fee (except for sponsored CAF members on PGT or PG on Schol)
- ❑ If you must delay your studies, you should request an LOA (AR 5.2.7)
 - Ask through your supervisor/stream coordinator
 - Department will forward with expression of support
- ❑ Part-time students (AR 5.2.4):
 - Must take a minimum of one course for the academic year in either the Fall, Winter or Summer semester, may not take more than two courses in any semester.

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Academic Integrity

- ❑ Academic Integrity
 - Review Graduate Calendar AR 5.17
- ❑ All graduate students enrolled in a graduate programme must complete AI500 in their first semester of studies per their letter of offer.

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Sessional Dates (Fall 2021)

- Start of Graduate Classes 13 Sep
- Fall Registration Deadline 17 Sep
 - Late registration fees applied after this date
- Deadline for Payment of Fall Tuition by Full-Time Students 30 Sep
- National Day for Truth and Reconciliation (Statutory holiday) 30 Sep
- Deadline "Add" and/or "Withdraw" without "WD" 8 Oct
 - Fees forfeited after this date
- Thanksgiving (Statutory holiday) 11 Oct
- Last Date to "Withdraw" from with a "WD" 29 Oct
 - No refund (courses dropped after this date will have a mark assigned)
- Remembrance Day (Statutory holiday) 11 Nov
- Registration Period for Winter Term 6 Dec - 14 Jan
- Fall Term Classes End 7 Dec
- End of Fall Term 21 Dec

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ECE Graduate Handbook

ECE Graduate Handbook (<https://ecegrad.segfaults.net/>)

- This handbook documents internal regulations and other information relevant to current and potential graduate students and supervisors in the RMC Electrical and Computer Engineering Department.
- Contents
 - Information for applicants to graduate studies
 - 2021-2022 Courses offered
 - 2021 Graduate Student Brief
 - Departmental graduate regulations
 - programme milestones and forms
 - MEng Project
 - MAsc thesis proposal
 - PhD Comprehensive requirement (breadth and depth examinations, and thesis proposal)
 - Thesis Examinations
 - Graduate studies committee
 - 2020 RMC Cyber Security Graduate Announcement
 - 2020 Annonce pour études supérieures en cybersécurité du CMR
- We intend to move this to the main ECE Site
 - <https://www.rmc-cmr.ca/en/registrars-office/graduate-programmes-electrical-engineering-and-computer-engineering>
 - Major undertaking

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ECE Graduate Level Courses (Fall 2021)

Full Year 2021-2022

| Number | Course Name | Instructor |
|--------|---|---|
| EE502 | Applied Research in Electrical and Computer Engineering | Dr Chan Fall 2021 Dr Beguenane Winter 2022 |

Fall 2021

| Number | Course Name | Instructor |
|--------|---|--------------|
| EE503 | Wheeled Mobile Robots: Modeling, Control and Instrumentation | Dr Liu |
| EE511 | Digital Signal Processing | Dr McGaughey |
| EE523 | Integrated Navigation Systems | Dr Noureldin |
| EE543 | Radar Basics and Applications | Dr Antar |
| EE578 | Introduction to Computer Systems And Network Security Note 1 | Dr Leblanc |
| EE595 | Cyber Threat and Attack Techniques Note 1, Note 2 | Capt Shust |

<https://ecegrad.segfaulcs.net/courses-2021-22.html>

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ECE Graduate Level Courses (Winter 2022)


Winter 2022

| Number | Course Name | Instructor |
|--------|--|--------------|
| EE513 | Topics in Electrical Engineering (Fuzzy Logic and Neural Networks) | Dr Karim |
| EE517 | Adaptive Filtering Theory | Dr Noureldin |
| EE519 | Synthesis of Digital Systems | Dr Chabini |
| EE533 | Hardware Implementation of Digital Signal Processing | Dr Beguenane |
| EE537 | Antenna Engineering | Dr Antar |
| EE547 | Digital Forensics Note 1 | Dr Roberge |
| EE549 | Digital Communications | Dr Chan |
| EE569 | Malware Analysis Note 1 | Dr Smith |
| EE580 | Applied Cyber Operations Note 1, Note 3 | Dr Knight |
| EE581 | Electronic Warfare Systems Engineering | Dr Bray |
| EE597 | Operational Technology Cybersecurity Note 1, Note 4 | Prof Lachine |

<https://ecegrad.segfaulcs.net/courses-2021-22.html>

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Other Graduate Course Options

<https://ecegrad.segfaulcs.net/courses-2021-22.html>

Other Graduate Courses at RMC

While many graduate courses are offered at RMC, we list a few here that may be of some interest to our students.

The **Master of Business Administration Program** offers the following course :

- Spring/Summer 2022 semester - MBA509, **Cyber Security Policy & Management**, by Dr [Hennessy](#), Dr [Knight](#) and Mr [Lachine](#) **Note 1**

The Master of Public Administration Program offers the following courses:

- To be confirmed- MPA591, **Cyber Statecraft and National Security**, by Dr [Leuprecht](#)
- To be confirmed - MPA535, **The Cyber Challenge**, by Dr [Leuprecht](#)

The **Mathematics and Computer Science Department** offers the following graduate courses this year:

- Fall 2021 - CS507, **Deep Learning with Artificial Neural Networks**, by Dr [Rivest](#)
- Winter 2022 - CS505, **Reinforcement Learning**, by Dr [Sturgeon](#)


Other Graduate Courses at Queen's University

The list of graduate courses offered by the Department of Electrical and Computer Engineering at Queen's university can be found [here](#).

The list of graduate courses offered by the Queen's School of Computing can be found [here](#).

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Academic Plan

- All PhD, MAsC & GCCS students must complete an academic plan.
 - Registration requires course listing
- Complete with your supervisor/stream coordinator
 - They will forward to ECE GSC Chair
- Revise as appropriate
- Ignore the “Date Completed/Mark” field

ROYAL MILITARY COLLEGE OF CANADA
 DIVISION OF GRADUATE STUDIES AND RESEARCH
 ACADEMIC PLAN

| GRADUATE STUDENT'S INFORMATION | | | | | |
|---|-------------|-----------------|---------------------|---|---|
| Name (Last, First) | | Student number: | | <input type="checkbox"/> Civilian <input type="checkbox"/> DND | <input type="checkbox"/> FT <input type="checkbox"/> PT |
| Academic Programme: | | Date: | | First registration <input type="checkbox"/> Fall <input type="checkbox"/> Winter <input type="checkbox"/> Summer | Expected date of competition <input type="checkbox"/> Fall <input type="checkbox"/> Winter <input type="checkbox"/> Summer |
| Supervisor(s): | | | | year | year |
| Thesis topic/title: | | | | | |
| ACADEMIC PLAN | | | | | |
| Course requirements: | | | | | |
| Serial | Course Code | Title | Date Completed/Mark | Comment | |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| Other programme requirements | | | | | |
| Comprehensives: | N/A | Planned: | Completed: | | |
| Thesis Proposal: | N/A | Planned: | Completed: | | |
| Thesis: | N/A | Enrolled: | Defended: | | |
| Project Proposal: | N/A | Planned: | Completed: | | |
| Thesis: | N/A | Enrolled: | Defended: | | |
| PROGRAM AUDIT (To be filled out upon programme completion) | | | | | |
| Course requirements: | | | | | |
| 1. The student has met all the requirements of the program? | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. CISA is up to date with all marks and annotations? | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. Has the student left the program without completing? | | | | <input type="checkbox"/> Yes (Comment Below) | <input type="checkbox"/> No |
| Comment: | | | | | |
| 4. Has the student provided future contact information? | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Details: | | | | | |

cc: DGSR for review and file.

<https://ecegrad.segfaulcs.net/milestones.html#programme-of-study> ¹⁴

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Course Registration

- Registration Online, through your student portal
 - Paper form will remain for RMC students taking courses at Queen's or other institutions through the Ontario Visiting Graduate Student programme.
- Full-time students must register each semester (Fall, Winter and Spring/Summer)
 - Full-time students who fail to register for two consecutive terms and part-time students who fail to register once per academic year may be required to withdraw from the programme (AR 5.6)
- ECE GSC Chair will approve registration from degree students
 - PhD, MASc, MEng students must submit a Progress Report prior to registration, except for their first semester

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Course Failure

- The passing grade for graduate courses is B – (70%)
 - For all required courses, including undergraduate courses for Provisional Students
- AR 5.14 details course Failures
 - On a first failure, student must advise ECE GSC Chair within 30 days of desire to:
 - Voluntarily withdraw from the programme
 - Request a supplemental evaluation (PhD, MASc, MEng, GCCS only)
 - Repeat the course (MEng, GCCS only)
 - Substitute the course (MEng, GCCS only)
 - On a second failure, the student must withdraw from the programme (AR 5.6)
 - A failed supplemental exam is considered a second failure.

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Seek Assistance!

- In Case of Problems
 - Do NOT hesitate to ask for help
 - If related to one of the courses, start with the course instructor.
 - You can also seek further help and advice through
 - Your supervisor
 - Your GSC coordinator
 - ECE GSC Chair
 - Head ECE

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Interest Only & GCCS Students Need not stay

INFORMATION SPECIFIC TO DEGREE STUDENTS

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Course Requirements

- ❑ **Course Requirements**
 - **PhD: 4 Graduate Level courses**
 - **MASc: 5 Graduate Level Courses + EE502**
- ❑ **Planning for Courses:**
 - **Watch carefully for the deadlines**
 - **At least 50% of courses have to be at RMC ECE**
 - **Explore more courses in other RMC Departments and in Queen's ECE and School of Computing.**
- ❑ **Focus on completing courses your courses as first programme requirement.**

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Progress Report

- ❑ **Progress report form is required by the second semester in which you register**
 - <https://ecegrad.segfaulcs.net/milestones.html#progress-report>
- ❑ **Complete your part carefully and provide all important details related to courses and research milestones achieved.**

ROYAL MILITARY COLLEGE OF CANADA
DIVISION OF GRADUATE STUDIES AND RESEARCH
PROGRESS REPORT
PROGRESS REPORT (add page for every progress report)

| | |
|--|----------------------------|
| <small>Semester:</small> | <small>Date:</small> |
| <small>Student:</small> | <small>Supervisor:</small> |
| <small>Name: _____</small> | |
| <small>Objectives / Milestones Achieved during last reporting period</small> | |
| 1. | |
| 2. | |
| 3. | |
| <small>Comments on progress relative to plan</small> | |
| | |
| <small>Objectives / Milestones For upcoming reporting period (and long-term)</small> | |
| 1. | |
| 2. | |
| 3. | |

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Progress Report

- The supervisor/stream coordinator must evaluate the student's progress and decide on either satisfactory or unsatisfactory progress (AR 5.6)
 - First unsatisfactory progress in one term results in a warning;
 - Students may be required to withdraw from programme following a second term of unsatisfactory progress (AR 5.6)

| SUPERVISOR'S REPORT | | |
|--|---------------------------------------|---|
| Comment on Overall Progress / Performance in Program. | | |
| 1. Overall progress is rated as: | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| 2. Student is aligned to graduate at scheduled time? | <input type="checkbox"/> Yes | <input type="checkbox"/> No (Delay:) |
| 3. Are there any concerns with respect to the student's ability to complete the program? | <input type="checkbox"/> No | <input type="checkbox"/> Yes (detail below) |
| Comments: | | |
| | | |
| SIGNATURES | | |
| Student: I have discussed the content of this progress report with my supervisor and have had opportunity to comment on its content. | | |
| Signature | Date | |
| Supervisor: I have discussed the content of this progress report with the student. | | |
| Signature | Date | |
| Chair: I have read this progress report. | | |
| Name | Signature | Date |

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Progress Expectations

- MSc – Full-Time*
 - Present the thesis Proposal within 13 months
 - Convocation in May of Year 2
 - Thesis accepted – Early April
 - Thesis defended – End March
 - Thesis Submitted – Early March
 - Thesis drafted – Early February
 - Get your experimentation done before posting!
- Normally 5 years maximum duration

- PhD
 - Pass the breadth/depth comprehensive exam within 14 months
 - Pass the thesis proposal within 26 months
 - Defend within 40 months
- Normally, 7 years maximum duration

All Graduate students must make an application to graduate!

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Interest Only, GCCS & PhD Students need not stay

INFORMATION SPECIFIC TO MASC STUDENTS

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EE502

- **EE502 – Applied Research in ECE**
 - **Compulsory for all MASC and MEng students**
 - **PhD students are welcome to audit the course**
 - EE502 will not be considered as part of their PhD programme.
- **One credit course over two semesters.**
 - **The first term provides orientation to grad studies and the ECE department.**
 - This is a great opportunity to meet ECE faculty members and get to know their active research projects, their research lab facilities and the potential for your Master thesis research.
 - **During the second term, students will be given the opportunity to conduct a literature survey in their proposed field of study,**
 - Done with their supervisor
 - Explore the current state of the art in their research field, leading to a proposal

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Thesis Supervisor

- ❑ Civilian graduate students are admitted with a thesis supervisor
- ❑ Military sponsored (PGT or PG on Schol) have to find on a supervisor by the end of the Fall semester
 - Talk to Faculty members
 - Visit Faculty members web pages
 - EE502
- ❑ Forms
 - <https://ecegrad.segfaults.net/milestones.html#assignment-of-thesis-supervisor>
 - <https://ecegrad.segfaults.net/milestones.html#student-supervisor-relations>

Assignment of Thesis Supervisor

Date: _____

| | |
|----------------|--|
| Student Name: | |
| Program: | |
| Thesis Title: | |
| Starting Date: | |

Thesis Supervisor:

Name: _____

Signature: _____

Date: _____

Thesis Co-supervisor (if applicable)

Name: _____

Institution/Department: _____

Signature: _____


Date: _____

Chair, GSC

Signature: _____

Date: _____

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Master of Engineering

- ❑ Offered as a transition for MASc students
 - You must have a willing MEng supervisor to request transfer
 - <https://ecegrad.segfaults.net/forms/supervisor-assignment-project.docx>
- ❑ Programme requirement of 8 courses and a project
 - Two semesters of PR500
- ❑ Discuss with your supervisor as early as possible
 - It is best is to make the decision before the start of the Fall semester of second year for full-time students

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Graduate Studies in ECE

Good Luck

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