



Electrical and Computer Engineering

MScE Student Guide

For students under the supervision of Dr Maclsaac

Version 1.0

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1 Important Sources of Information

All students must follow the guidelines outlined in the ECE graduate handbook. This is available on the ECE department website by googling for:

- UNB ECE Graduate Handbook
- or by following: www.ece.unb.ca (>Current Students>Forms and Links)

Students are also advised to review documentation made available by the School of Graduate Studies at:

- <http://www.unb.ca/gradstudies/current/student-resources.html>

and in particular, download and read the relevant documentation linked under ‘Theses, dissertations, and report guidelines.’

You can also find useful administrative material on my web site at:

- <http://www.ece.unb.ca/macisaac/> (follow the research link)

I will post this document, and the **Coursework Completion Form** which all students must submit once they are finished their coursework and before the start of their last full term (usually within 12 months).

Finally, I will create a **folder on a common drive** for you so that we can share documents electronically. If you don’t already have one, send me an email asking me to create one for you and include your initials in the email (first, middle, last). Lots of useful stuff is already available on this common drive including:

- Readings on the fundamentals of EMG
- References and Readings on a variety of EMG topics
- Electronic Copies of theses written by other students I supervised
- Code and data related to EMG processing
- Documentation Templates (proposal and thesis)
- Examples of Commonly used documents (ethics form, consent form)
- Commonly used figures (which you are free to use since I drew them)

2 Highlights of Important Information

The following are some important highlights taken from the ECE handbook (and further annotated by me):

- ☑ To graduate, all MScE Students must successfully complete 15 CH (normally 5 courses), a written proposal and seminar, a written thesis, an oral defense, all within 4 years. Students must also reside in the program for at least 3 terms.
- ☑ Courses for credit must be chosen from the list of ECE graduate courses and be approved by me (your supervisor). In some circumstances (when they are relevant to your research), I may approve up to two ECE4000 level courses, or courses chosen from another department/program (eg. CS graduate courses or technical electives).
- ☑ Proposals are to be completed within 9 months (11 months in a worst-case scenario). Documents should be compiled with the template I provide for you (ask me for it if you cannot find it). The document is limited to 8 pages. It generally take about 6 draft submissions before I will sign off on the document and you can submit it to the Director of ECE grad studies, but this depends on how well you integrate feedback into your process. If you don't integrate well, the process will take longer.
- ☑ Theses must adhere to the university guidelines provided by the graduate school. Documents should be compiled with the template I provide for you (ask me for it if you cannot find it). The document is limited to 70 pages. I will sit with you to work out the table of contents to help you get started. It generally take about 12 draft submissions before I will sign off on the document and you can submit it to the Director of ECE grad studies, but this depends on how well you integrate feedback into your process. If you don't integrate well, the process will take longer.
- ☑ Expect a 4-week review period between submission to the Director and presentation to the committee, for both proposals and theses.
- ☑ I encourage you to TA. You must attend the Lab Orientation Session help just prior to each Fall term.

3 Progression Through your Program

The timeline figure below indicates the work hours and timing required to complete the MScE program in 4 terms, which is our goal. You can expect supervision at a rate of about 1 hour/week from me. If you are competent, hardworking, and eager, this will be sufficient for you to meet the milestones and graduate in <18 months, but this timeline is ambitious. **Most students don't fully comply with the timeline which result in delays in graduation.**

I work hard with my students to help them meet the milestones delineated in the timeline. I will absolutely not however, be pressured into working more per week with one student than others. This would not be fair to my other students. My rate of supervision will not increase because of a student weakness, an unforeseen cause for delay (these are regular occurrences in

a research environment), or a sudden urgency to finish. I am however, willing to work with you on an extended timeline (an extra term or two) if you accept the timeline, and are working regularly to overcome your weaknesses. **Most MScE students do finish in 20 months (5 terms).**

(a stand-alone copy of this timeline is available in the common folder and online at www.ece.unb.ca/macisaac (>research))

TERM 1 (50 research hours ≈ 7 full days)

SEP				OCT				NOV				DEC			
W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
				Course 1 (104 hrs)											
				Course 2 (104 hrs)											
				Course 3 (104 hrs)											
				Preliminary Lit Review (50 hrs)								10 papers reviewed			

TERM 2 (90 research hours ≈ 13 full days)

JAN				FEB				MAR				APR			
W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
				Course 4 (104 hrs)											
				Course 5 (104 hrs)								coursework complete			
Secondary Lit Review (50 hrs)				20 papers reviewed											
				Gap Analysis (40 hrs)				Research question articulated							

TERM 3 (305 research hours ≈ 44 full days)

MAY				JUN				JUL				AUG			
W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Preliminary Investigation (45 hrs)				Planning (15 hrs) Data Collection (15 hrs) Results Report (15 hrs)											
				Figure Tools P1 (25 hrs)											
Analysis of Prelim Results (80 hrs)															
				ASQ (10 hrs)				<i>Proposal documentation moves along more quickly if (1) literature reviews are comprehensive and well-articulated in writing and (2) results and analysis of preliminary investigation(s) are written up as they proceed (ie purpose, methods, results, conclusions)</i>							
				Proposal (90 hrs)				Document and Presentation							
				Figure Tools P2 (10 hrs)											
								Planning (15 hrs) Data Collection (15 hrs) Results Report (30 hrs)				Principle Investigation (45 hrs)			

cont'd...

TERM 4 (174 research hours ≈ 25 full days)

SEP				OCT				NOV				DEC			
W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Principle Analysis (40 hrs)															
TOC (2hrs)															
Thesis Documentation (132 hrs)												Document Submission			

Thesis documentation moves along more quickly if (1) literature reviews are comprehensive and well-articulated in writing and (2) principle investigation(s) are written up as they proceed (ie purpose, methods, results, conclusions can be fully specified and reused in thesis documentation)

TERM 5 (30 research hours ≈ 4 full days)

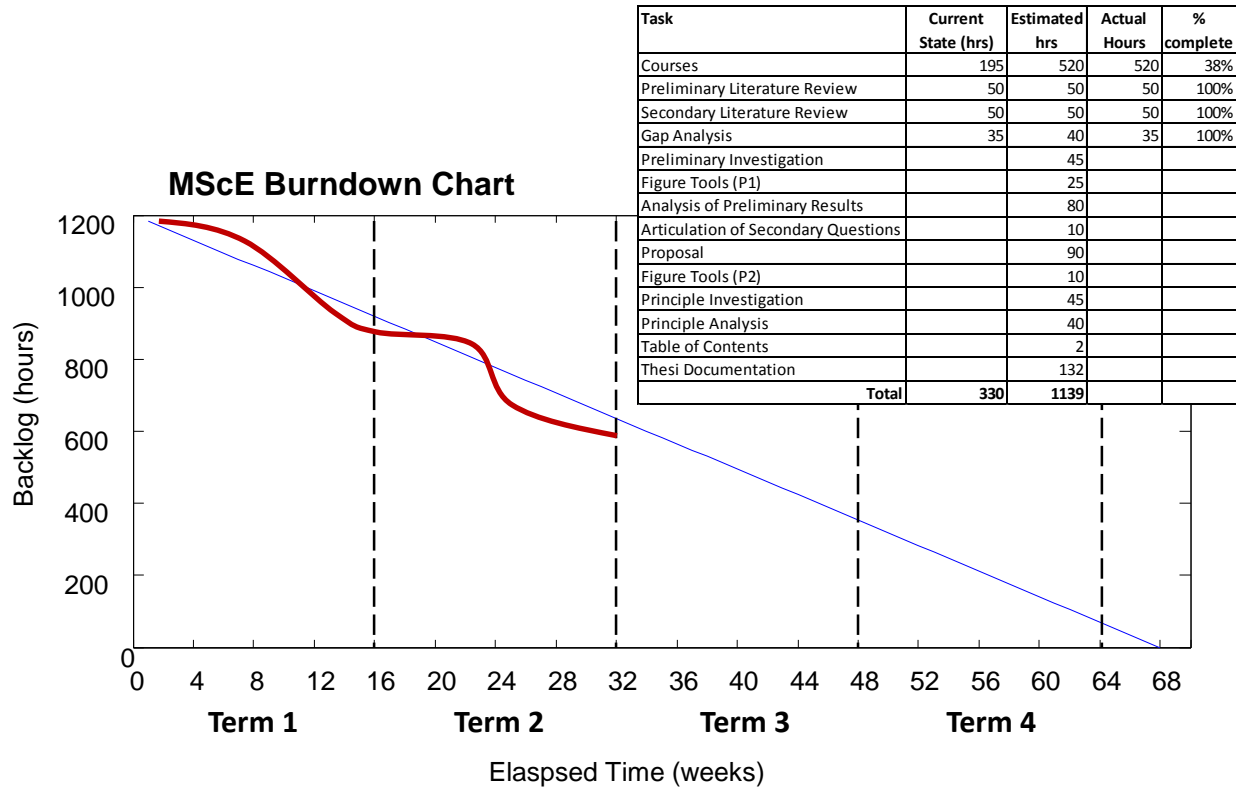
JAN				FEB				MAR				APR			
W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Thesis Defense completed															
Publication (30 hrs)				Publication Submission											

Ideal Timeline for Graduating < 18 months

Here are some guidelines which may help you to comply with ideal timeline:

- ☑ All MScE students are expected to complete their coursework requirements within 8 months.
 - Students must fill out a **Coursework Completion Form** and submit it to me before the end of their 3rd term. The form is available online in the common folder, and online at www.ece.unb.ca (follow the research link).
- ☑ All MScE students are expected to report to me their progress via a weekly email on Mondays. This email must include a short point-form list of substantial achievements (eg. 2 new additions to lit review, a data set collected, code working, Chapter 4 written etc.). If nothing substantial is achieved, the email should simply state this (this happens from time-to-time, especially when you are working out complex details).
 - Do not include worked details in the email. If you want me to look at something, write it up, put it in the common folder, and request a review and/or a meeting. Requests should only be made if you have something specific to show me, or to ask me. We will schedule a regular meeting time at the beginning of each term, but will only use this time when requested. It is your responsibility to ensure that we meet from time-to-time.
 - Students are encouraged to post regular short work detail reports. They can be used to receive informal feedback on your writing and can become the basis of your more formal documents. The literature review scheduled into the timeline is one such work detail report. Detailed investigation reports (Purpose, methods, results, conclusions) are also good ideas – if written properly, these transpose easily into thesis documentation.

- ☑ Students are encouraged to maintain a burndown chart to track their progress. The example below depicts such a chart:



- ☑ All Full-time MScE students are expected to work on campus at least 40 hours/week until their research is completed and documented satisfactorily.
 - Students must disclose, before commencement, any participation in part-time work above/beyond 1 full TAsip per term
 - Working at home is discouraged and will generally extend graduation by a full term or more
 - Leaving campus before graduation is discouraged and generally extends graduation by more than a full term; funded students will lose their funding at the onset of departure.
- ☑ According to Calendar Regulations from the Graduate School, "The Master's thesis must demonstrate the candidate's competence to undertake independent research work; it must make a contribution to knowledge in the candidate's field of study; it must show that the candidate is fully aware of the pertinent published material; and it must be written in a satisfactory literary style. As well, it should be free of typographical and other mechanical errors." A contribution can considered to be a new synthesis of known information

- ☑ All MScE students are expected to work independently to produce a clear, concise and content-rich proposal and thesis document detailing their research.
 - Regular drafts of the proposal document, starting in term 3 should be submitted. Expect to submit at least 6 drafts before the document is ready for submission.
 - Regular drafts of the thesis document, starting in term 4 should be submitted. Expect to submit at least 12 drafts before the document is ready for submission.
 - Expect about 4 hours/month of *reviewing* from me (remember - 1 hour/week). Well-synthesized documents typically require less than this in order to be ready on schedule. While I will make minor edits for you, **it is not my job to edit your thesis – I will direct the editing process, but you are responsible for following my directions and making edits.** Only documents written in a satisfactory literary style will be reviewed. If you are not a competent writer, you must seek external support to improve.
 - If you are doing nothing but waiting for feedback for prolonged periods of time, consider recalling a submission to improve it before resubmission. Substandard drafts which require extensive editing will take longer to review and will generally extend graduation by more than a full term.
 - Poor documentation is a common cause for delays in graduation. Matters of both language and content are typically problematic. It is highly recommended that all students take advantage of all opportunities to submit documentation for feedback and to do this as early as possible (lit reviews, investigative reports, writing courses etc.).
- ☑ The departmental review process for MScE documents is generally one full month. Start and end dates of terms have no influence on this process. However, reviews can be delayed over examination periods, over the summer, and over holiday breaks (eg. in December). Submission to the department for review cannot occur until I am satisfied with the quality of the work and the way it is documented.
- ☑ All MScE students are expected to produce a publishable paper based on their research. This document should be produced during the departmental review process of the thesis.