

# A Master's Degree in the Department of Electronics

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# Overview

- Why get a Master's degree?
- Two different Master's degrees
- Admission requirements
- Funding
- Tuition costs
- The OCIECE
- How to apply – it's very easy!
- Master's enrollment target for fall 2007
- What to do if you are interested.

# Why Get a Master's Degree?

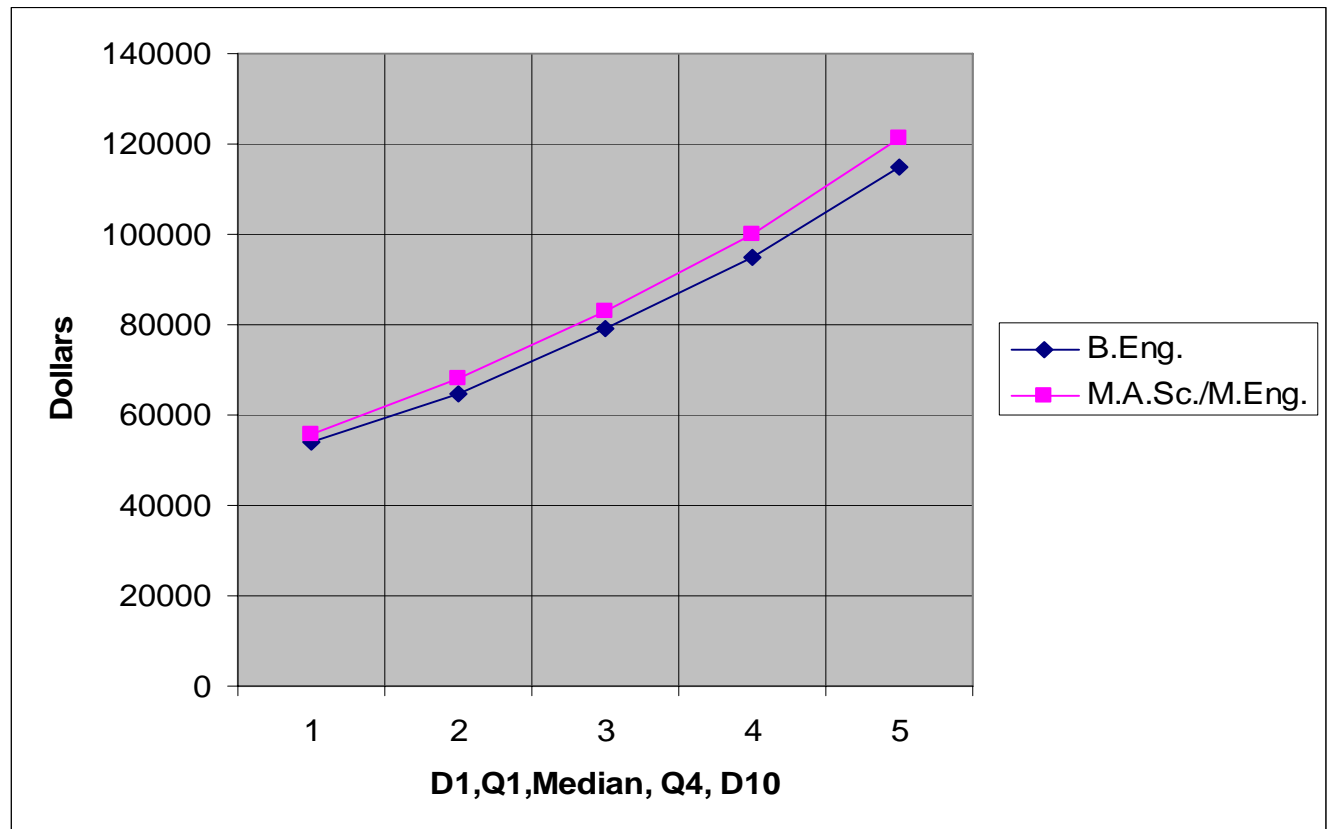
- Your B.Eng. degree gives you only the basic knowledge that you can build on during an engineering career and it's getting very difficult to cover foundation material in 4 years and only 40 courses.
- Your undergraduate degree is so course/task intensive that it is difficult sometimes to enjoy the university experience – you have very little time to think about a certain subject since you are constantly juggling deadlines.
- A Master's degree gives you a much better working knowledge in a chosen area – the result of fewer but more intensive courses and more time to think about, absorb and apply the material.
- A Master's degree gives you the opportunity to apply for more technical job or a job with more responsibility.

# Why Get a Master's Degree? (Cont'd)

- Most students find the experience in graduate school much more enjoyable than their undergraduate studies.
- You will probably get paid to go to school – a much better option than sitting around waiting for a job if you haven't got one; or the Master's degree should open the door to a better job for you in the long term.
- A small number of you may want to pursue a career in research or academia – for this a Ph.D. is required, and a Master's degree with thesis is the entry to a Ph.D. program.
- You will get a chance to travel to international conference.
- Over your career you will earn significantly higher wages having a Master's degree than just a Bachelor's degree. A Master's degree is an investment in the future (\$\$\$\$).

# Why Get a Master's Degree? (Cont'd)

- 2003 salary survey by Ontario Society of Professional Engineers
  - 3118 engineers with B.Eng. as highest degree
  - 913 engineers with M.A.Sc. or M.Eng. as highest degree (23%)
  - Salary differential at all salary levels ~ 5% (similar result in US survey)



# Two Different Master's Degrees

- M.A.Sc.
  - 5 credits
  - Complete 6 half courses with at least B- each course ( 3 credits)
  - Complete and defend a Master's thesis ( 2 credits)
    - Documents a research effort of about 16 months duration
    - Need not be totally original research
      - Can be extension of existing theory to a new problem
      - Can be mainly experimental in nature
      - Does not have to lead to a research publication – a bonus if it does!
  - Can be completed full-time or part-time
  - Full-time students receive funding for 24 months
  - Most Master's students in the department are full-time M.A.Sc. students
  - Should complete the degree in 24 months if full-time
  - Required if you want to go on to a Ph.D. degree

# Two Different Master's Degrees (Cont'd)

- M.Eng.
  - 5 credits
  - Complete 9 half courses with at least B- each course ( 4.5 credits)
  - Complete a one term project ( 0.5 credits)
    - Can be a literature search or tutorial on a research topic
    - Can be circuit design and test
    - Can be design /automation of experimental test bench etc.
    - Requires a written report and an oral presentation
  - Can be completed full-time or part-time
  - Students are not funded since there are no research deliverables to a professor.
  - There are only a few M.Eng. students in the department and they are mostly part-time.
  - Good option to upgrade your knowledge while in a full-time job

# Admission Requirements

- Admission requirements are the same for M.A.Sc. or M.Eng. and for full-time or part-time studies.
  - Need minimum B+ average (9.0/12) for admission
  - If just under a B+, your case is better if you show an upward trend in your CGPA and have a very good fourth year GPA
  - If just under a B+, you can take a couple of graduate courses as a special student to try to raise your CGPA
  - Two letters of reference from academics
    - one letter is usually from the supervisor of your fourth year project who should be most familiar with your abilities.
    - other letter from a course instructor
  - Recent transcript – note you do not need to request one for the application since we can print it once we have your application.

# Funding

- All full-time M.A.Sc. students receive funding
- Funding level depends on entrance CGPA
- Four components in funding package:
  - (1) External scholarships
    - NSERC-Post Graduate Scholarships and Ontario Graduate Scholarships (OGS)
    - These are substantial \$15K - \$17.5K
    - Should have already applied if CGPA over 10.0
  - (2) Teaching Assistantship (TA)
    - Need CGPA > 10 (A-)
    - Half TA (10 hrs/week for 1 term) ~ \$4.5K
    - Full TA (10 hrs/week for 2 terms) ~ \$9K
    - If you don't get one on entry, you can get one later if you have CGPA > 10 in graduate courses.

# Funding ( Cont'd)

- (3) Scholarship (SC) from Graduate Studies
  - Range from \$1K - \$3K depending on CGPA
  - Extra \$3K domestic tuition scholarship if CGPA > 11.0
- (4) Research Assistantship (RA) from supervisor
  - Typically \$8K - \$12K
- Total package varies from \$12K to \$35K depending on CGPA and amount of external scholarship (if any)
- See Prof. Syrett for better idea of the amount of funding you could expect to receive.

# Other Funding

- Internal Merit Scholarships
  - Once admitted, you are eligible for other internal scholarships that are awarded through nomination by the department and competition university-wide.
  - No application needed
  - Value ranges from \$1K- \$5K, a few > \$10K
- Bursaries
  - These are available upon application by the student
  - Must show financial need
  - Typically \$500 - \$1000 per term

# Tuition Costs

- Full-time domestic student
  - Average approx \$2200 per term (Fall, Winter, Summer)
- Part-time domestic student
  - Average approx \$1050 per term (Fall, Winter, Summer)
- Full-time Visa student
  - Average approx \$5100 per term (Fall, Winter, Summer)

# The OCIECE

- The Master's degree programs are actually loosely administered under the Ottawa-Carleton Institute for Electrical and Computer Engineering or OCIECE
- The OCIECE is a joint institute for graduate studies between
  - Department of Electronics at Carleton
  - Department of Systems and Computer Engineering at Carleton
  - School of Information Technology (SITE) at the University of Ottawa
- You can take OCIECE courses at Carleton or the University of Ottawa for credit ( typically 20 courses offered each term)
- Your thesis supervisor is in the Department of Electronics
- You get the Master's degree from Carleton

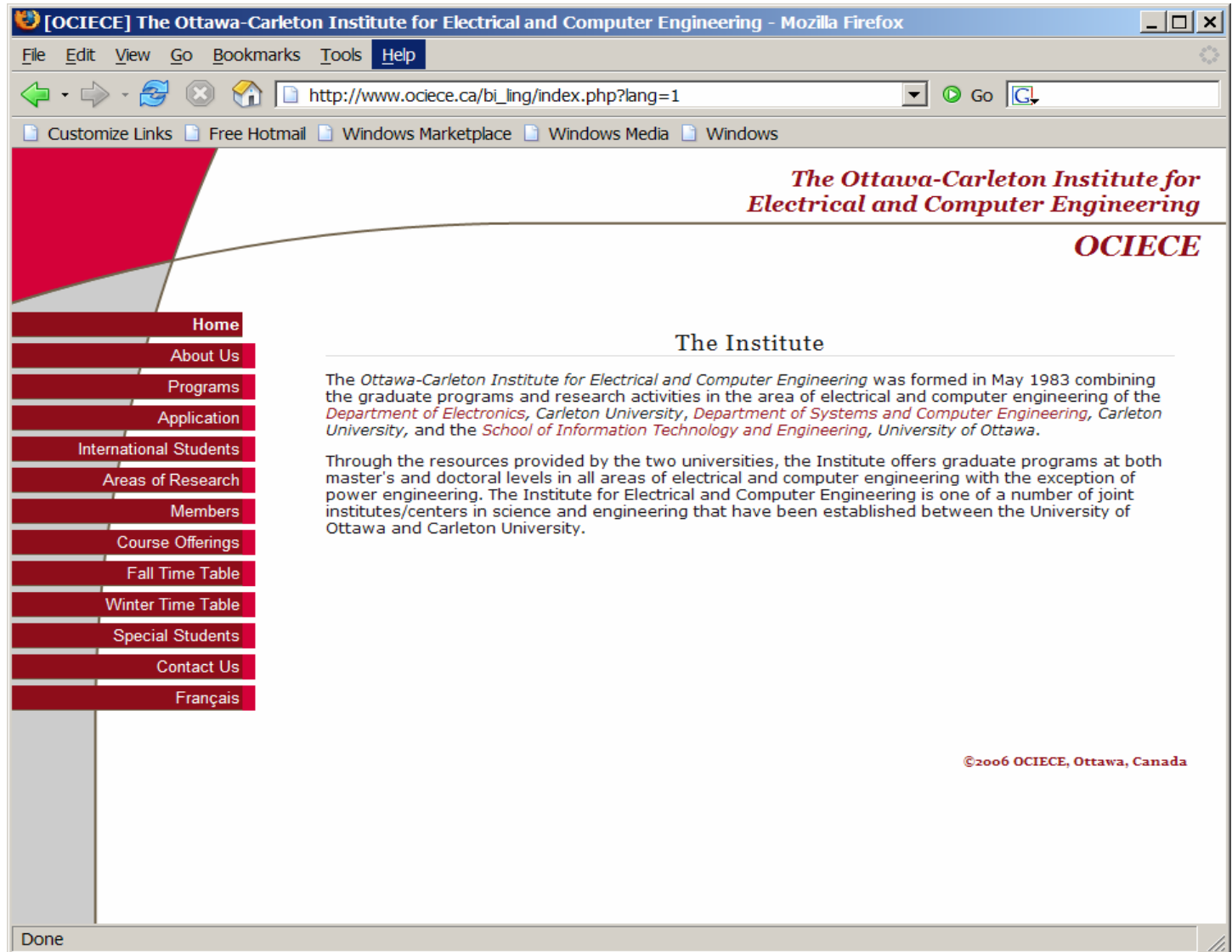
# The Application Process

- Application process is online at [www.ociece.ca](http://www.ociece.ca)
  - Initial contact (transparent to you) is Ontario Universities' Application Center or OUAC -- it collects some personal data, program data and collects application fee of \$75.00
  - Carleton contact for OCIECE (Cate Palmer in Minto 3090 ) sets up your file and collects reference letters and other hard copy of forms from you.
  - DOE will print your transcript to include in your application
  - When file is complete, joint admissions committee reviews your file.
- You are admitted to Carleton ( you will get an admission letter and a funding letter at the same time).
- I will show you the online application process in the next few slides.

# The Application Process -- Screen 1



# The Application Process –Screen 2



The screenshot shows a Mozilla Firefox browser window displaying the OCIECE website. The browser's address bar shows the URL [http://www.ociece.ca/bi\\_ling/index.php?lang=1](http://www.ociece.ca/bi_ling/index.php?lang=1). The website header features the OCIECE logo and the text "The Ottawa-Carleton Institute for Electrical and Computer Engineering". A navigation menu on the left lists various links: Home, About Us, Programs, Application, International Students, Areas of Research, Members, Course Offerings, Fall Time Table, Winter Time Table, Special Students, Contact Us, and Français. The main content area is titled "The Institute" and contains two paragraphs of text. The first paragraph describes the institute's formation in May 1983, combining graduate programs and research activities from the Department of Electronics at Carleton University, the Department of Systems and Computer Engineering at Carleton University, and the School of Information Technology and Engineering at the University of Ottawa. The second paragraph details the resources provided by the two universities, offering graduate programs at both master's and doctoral levels in all areas of electrical and computer engineering, except for power engineering. The footer of the page includes the copyright notice "©2006 OCIECE, Ottawa, Canada".

[OCIECE] The Ottawa-Carleton Institute for Electrical and Computer Engineering - Mozilla Firefox

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http://www.ociece.ca/bi\_ling/index.php?lang=1

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*The Ottawa-Carleton Institute for  
Electrical and Computer Engineering*

**OCIECE**

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Special Students  
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Français

**The Institute**

The *Ottawa-Carleton Institute for Electrical and Computer Engineering* was formed in May 1983 combining the graduate programs and research activities in the area of electrical and computer engineering of the *Department of Electronics, Carleton University, Department of Systems and Computer Engineering, Carleton University, and the School of Information Technology and Engineering, University of Ottawa.*

Through the resources provided by the two universities, the Institute offers graduate programs at both master's and doctoral levels in all areas of electrical and computer engineering with the exception of power engineering. The Institute for Electrical and Computer Engineering is one of a number of joint institutes/centers in science and engineering that have been established between the University of Ottawa and Carleton University.

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Done

# The Application Process – Screen 3

The screenshot shows a Mozilla Firefox browser window displaying the OCIECE website. The address bar shows the URL: [http://www.ociece.ca/bi\\_ling/application/index.php?lang=1](http://www.ociece.ca/bi_ling/application/index.php?lang=1). The page title is "[OCIECE] The Ottawa-Carleton Institute for Electrical and Computer Engineering - Mozilla Firefox".

The website header features the OCIECE logo and the text "The Ottawa-Carleton Institute for Electrical and Computer Engineering". A navigation menu on the left includes links for Home, About Us, Programs, Application (highlighted), International Students, Areas of Research, Members, Course Offerings, Fall Time Table, Winter Time Table, Special Students, Contact Us, and Français.

## Application

### HOW TO START

Start by deciding what areas of research interest you and find out who is working in that area. Refer to the "Members" page to find out what professors are working on. Then you may proceed to the application forms.

You are required to make a choice between two universities, based on your selected program. If you are interested in more than one area of study, you should apply to the university offering your first choice of program.

If you meet the admission requirements but are not recommended for admittance to your first choice of program, your application will be considered at the second university. Select from the programs listed below.

Non-Resident students (International Students) please refer to the "International Students" page before proceeding.

### CARLETON UNIVERSITY

- M.A.Sc. Electrical (Electronics)
- M.A.Sc. Electrical (Systems and Computer Engineering)
- M.Eng. Electrical Engineering (Electronics)
- M.Eng. Electrical Engineering (Systems and Computer Engineering)
- Doctor of Philosophy: Electrical Engineering (Electronics)
- Doctor of Philosophy: Electrical Engineering (Systems and Computer Engineering)

### UNIVERSITY OF OTTAWA

- Master's Degree
- Doctor of Philosophy

### CONTACTS

Done

# The Application Process – Screen 4

The screenshot shows a Mozilla Firefox browser window displaying the 'Graduate Studies Online Application' page. The browser's address bar shows the URL: [https://secure.gs.carleton.ca/onlineapps/pdata\\_apply.php?program=MASC-t](https://secure.gs.carleton.ca/onlineapps/pdata_apply.php?program=MASC-t). The page features the Carleton University logo and navigation links such as 'Library', 'Carleton A-Z', 'CU Phonebook', 'Campus Map', 'Prospective Students', 'New & Current Students', 'Alumni', and 'Faculty/Staff'. The main content area is titled 'Application Account Request Form' for the 'Master of Applied Science: Electrical' program at the 'Ottawa-Carleton Institute for Electrical and Computer Engineering'. It provides instructions on how to apply and a dropdown menu to select an admission session. Below this is a 'Personal Information' section with various input fields for contact and identification details.

**Graduate Studies Online Application**

**Application Account Request Form**

**Master of Applied Science: Electrical**  
**Ottawa-Carleton Institute for Electrical and Computer Engineering**

Application accounts are available to those who wish to apply to the Master of Applied Science: Electrical. Once you have completed and submitted the application account form, you will receive an email message within a few minutes containing your application account information. Please note that the email will be sent from **Ontario Universities' Application Centre (OUAC)**.

Please note that your **email address must be entered correctly** as you will be prevented from changing it during the application process.

For which session do you wish to be admitted?

**Personal Information**

\* Email:  Required

\* Title:  Mr.  Ms.  Mrs.  Miss  Dr.

\* First Name:  \* Last Name:

Address:

\* City:  Prov./State:

Postal Code:  \* Country:

Phone:  Ext:  Fax:

\* Date of Birth:

\* Country of Citizenship:

\* Citizenship Status at Registration:

\* Required Field.

# Master's Enrolment Target for Fall 2007

- Current Master's enrolment in DOE – 72 total
  - 41 Full-time M.A.Sc. students
  - 27 Part-time M.A.Sc. students
  - 0 Full-time M.Eng. students
  - 4 Part-time M.Eng. Students
- We would like 22 new full-time Master's students
  - 20 domestic students (Canadian or LI)
  - 2 Visa students
  - Not all Carleton undergraduates but we would like a good number of you to return to the Master's program with us.

# Interested?

- Talk to your project supervisor about his research areas if you have found what you are doing in the project to be really interesting.
- Talk to the professors in the fourth year courses that you find really interesting.
- Remember that a Master's degree is well worth it over your working career!
- See me in Room 4150 Mackenzie for further information
- Email me at [bas@doe.carleton.ca](mailto:bas@doe.carleton.ca)

# Apply!

- Apply online at [www.ociece.ca](http://www.ociece.ca)
- Application deadline is March 1<sup>st</sup>
- If you qualify and are only slightly interested you should still apply – keep all doors open! You may decide to at least enroll for part-time M.Eng. to improve your skills.
- Application costs only \$75.00 and we will reimburse you for \$50 if you have CGPA > 9 from Carleton University and your application is complete by March 1<sup>st</sup> !