

**2024-25**  
**Graduate Handbook**  
Mathematics and Statistics  
University of Victoria



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# Welcome

Let me offer you a warm welcome to the academic year 2024-25, especially if you are one of our new students. I hope to meet each one of you soon. Please consider me a source of information and support for the duration of your studies.

I would also want to expressly recognize the vital role that graduate students play in research and teaching excellence, and to thank you in advance for this.

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Department of Mathematics and Statistics

# Preface

This handbook has been prepared with the help of many faculty, staff and students, and it has many aims, including: (1) to provide a summary of information relevant for grad students in the Department; (2) to point to where more updated information can be obtained, especially for things that are external or change often; and (3) to clarify expectations our grad program has on students, and conversely that students can have on the program. The handbook is an unofficial guide; the official policies exist elsewhere and are referred to in the relevant places. Specific questions or concerns should be addressed to the Graduate Advisor.

The UVic Graduate Calendar explains your rights and responsibilities as a graduate student, gives general policies and regulations, and summarizes the services available at the University. The rules in the Graduate Calendar take precedence, but in some situations they leave room for stricter specific departmental policies.

Questions regarding the interpretation of items in the handbook should be directed to the Graduate Advisor. Corrections (typos, broken links, etc.) and suggestions, especially for places where extra detail is needed, are especially welcome.

# Contents

1	General Information	4
2	Financial Support	13
3	Courses	17
4	Candidacy Exams	21
5	Teaching and TA Work	25
6	Project/Thesis/Dissertation	32
7	Finishing Your Degree	34

# 1 General Information

This handbook is mainly concerned with how things work for graduate studies in the Department of Mathematics and Statistics, but it is important to set some context about how things are organized at UVic in general first.

Your home unit is the Department of Mathematics and Statistics. As an academic unit, it belongs to the Faculty of Science. But, as is true of all graduate students, your primary academic faculty is the Faculty of Graduate Studies (FGS). Applications, admissions, registration, and records for graduate students are handled by the Graduate Admissions and Records Office (GARO).

Together, FGS and GARO set and enforce the University-wide policies surrounding graduate studies. They also perform a number of other functions. For instance, FGS is involved with recruiting students, the adjudication of student awards, and the co-ordination of interdisciplinary studies. GARO handles transfer credit, program changes, and similar registration-related functions.

Faculty of Graduate Studies

Graduate Admissions and Records

Department Grad Info

## Your Supervisor and Committee

Students admitted to our department are automatically assigned a supervisor (or co-supervisors). During your first year you should form a supervisory committee and have the first meeting with them. The Graduate Supervision Policy defines the expectations and responsibilities in the supervisory relationship and the supervisory committee, and you should be familiar with it. A healthy, well-informed, student-supervisor relationship is obviously of primary importance for a good experience in graduate school. The Graduate Advisor, supported by the Graduate Committee, oversees the graduate program in the department, and *you should always feel free to contact them for information or help.*

## The Graduate Calendar

The UVic Graduate Calendar describes academic regulations for your program. If academic regulations change while you are studying for your degree, always refer back to the calendar for your entrance year. In addition, the calendar maintains up-to-date lists of courses, personnel, and important dates for the academic year.

## Registration

As a graduate student, you must ensure that you are registered full-time in every term. Here is the naming convention for our academic terms.

<b>term</b>	<b>months</b>	
fall	September to December	winter session
spring	January to April	
summer	May to August	summer session

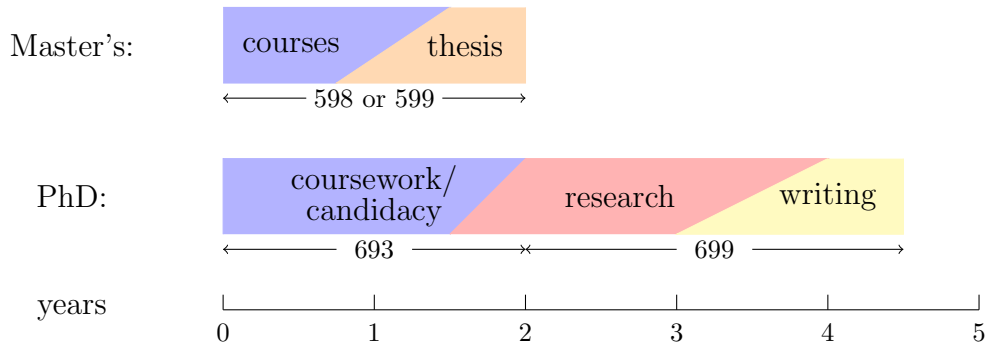
In addition to your planned coursework, you will need to (repeatedly) register in one of the following ‘shell courses’ that indicate you are preparing for specific graduation requirements. When you do so, you automatically have full-time status as a graduate student, even if you are taking no academic coursework.

<b>course</b>	<b>purpose</b>	
MATH 599	thesis	Master’s
STAT 598	project	
STAT 599	thesis	
MATH 693	candidacy	PhD
MATH 699	dissertation	
STAT 693	candidacy	
STAT 699	dissertation	

For the PhD program, register in MATH or STAT 693 every term until you have completed your candidacy. Then, register in MATH or STAT 699 every term thereafter.

Students typically register for at least two academic courses in their first term and get all coursework finished in the first half of their degree. This provides training for your research and helps build early relationships with faculty and fellow students. It also clears up substantial time for focus on research and writing in the second half. A rough timeline

is shown below; you should discuss details such as course selection and deadlines with your supervisor.



## Netlink ID and E-Mail

If you haven't done so already please apply for a Netlink ID. The Netlink ID is used to access pretty much all computing resources on campus. An e-mail account associated with your Netlink ID will be also created. The university will use this e-mail address for all correspondence with you and may post it on an online directory. Please check this e-mail account regularly at <https://outlook.office.com/>. Please be aware that you will get some phishing emails, many pretending to be from UVic, threatening to remove a service if you don't provide your Netlink ID and password. Delete these emails or report them to [sysadminms@uvic.ca](mailto:sysadminms@uvic.ca) if you're not sure.

Our department uses a number of mailing lists to communicate information. For graduate students, the key list is [msgrad-1@lists.uvic.ca](mailto:msgrad-1@lists.uvic.ca). As a grad student in our department, you may post to this list. There are similar lists for faculty and staff. General information for the department often comes from the address [msdistribution@uvic.ca](mailto:msdistribution@uvic.ca). You may also wish to join and monitor various specific lists, such as for seminar announcements. See Department Mailing Lists.

For additional general information on e-mail at UVic, including set-up and support, see the UVic Systems Email and Calendar page.

## Computers

An overview of the department and UVic computing resources can be found on the Math and Stats Computing Resources page.

## Department and Office Info

The department's general office is DTB A418. This is located in the David Turpin Building, A wing, on the fourth floor; DTB is our building code.

Department offices are located on the fourth and fifth floors of DTB. There are shared office spaces open for Master's students on the second and fifth floor. There is also a shared kitchen in DTB A218, with a sink, fridge, and microwaves.

As a graduate student, you receive keys to access your shared office space (if applicable) and to the building for after-hour entry. You can sign out keys from the general office at no charge. Please be careful with your keys; if you lose any, there will be a charge to replace them.

If you require an audio visual key for teaching or giving a talk, you can sign one out temporarily for the day, or for the term with a \$10 deposit. This deposit will be refunded to you once the key has been returned.

You also receive an entry code for the mail room (DTB A427), which contains office supplies, photocopiers, a printer and mail slots. You should check your mail slot regularly.

If you are a PhD student, an office and desk will be assigned specifically to you by the department. Each desk is numbered and so we ask that you do not switch desks. If there is an issue with your assigned office or desk, please contact our admin officer at [aofficerms@uvic.ca](mailto:aofficerms@uvic.ca). For heating, electrical or furniture repairs, please contact the receptionist at [deptms@uvic.ca](mailto:deptms@uvic.ca).

You are assigned a personal photocopier code. Please do not share your copier codes as these codes keep track of the number of copies you make. There is no charge for printing, scanning or faxing. However, high volumes of printing may be questioned and could result in having your photocopier access revoked.

There are several rooms that may be booked in DTB. Room bookings can be made on Sharepoint.

Here is a table of the key office contacts in the department.

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### Directory of Personnel

position	name	office	phone	e-mail
Chair	Gary MacGillivray	A418c	721-7435	chairms@uvic.ca
Assistant to Chair	Amy Almeida	A418	721-7436	chairasstms@uvic.ca
Grad Advisor	Marcelo Laca	A548	721-7467	gradadvms@uvic.ca
Grad Secretary	Natalie Vidal	A418	721-7468	gradsecms@uvic.ca
Admin Officer	Marie Marlo-Barski	A418b	721-7459	aofficerms@uvic.ca
Systems Admin	Kelly Choo	A418a	472-4927	sysadminms@uvic.ca
Administrative Assistant	Justin Holman	A418	721-7437	deptms@uvic.ca

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## Student Card

Your UVic student card goes by the name ‘ONECard’. It is the official identification card for the University of Victoria community. As long as you’re affiliated with UVic, your ONECard will be your most important piece of ID. Carry it with you at all times when on campus.

ONECard has several additional features. It is also your library card, recreation facility access card, and UVic Health Services identification. You can also store money on your ONECard to use as a debit card for on-campus food services.

For more information, including adding funds, visit <http://www.uvic.ca/onecard/> or the ONECard desk in the Jamie Cassels Centre.

## Welcome Centre

The Welcome Centre, located in the Jamie Cassels Centre, provides orientation programs and other introductory events.

Drop by the Welcome Centre if you need help finding your way around our campus or have a question about UVic.

## Tuition and Fees

For degree students at the graduate level, tuition is assessed as a total degree program fee, not as a per course fee. Payment of the fee is broken down into ‘fee instalments.’ You will be charged an instalment once per term you are registered in a degree program. Fees are



assessed in September, January and May. There is a minimum number of fee instalments (5 for Master's and 7.5 for PhD). After a maximum number of fee instalments (6 for Master's and 9 for PhD), your tuition drops to a lower 're-registration fee'. However, students who remain registered after exceeding the time limit for their degree (normally five years for a master's degree and seven years for a doctoral degree) will be assessed a program extension fee at the regular fee instalment rate each term.

You will be assessed domestic fees if you are a Canadian citizen or permanent resident. International fees will be assessed if you are studying on a student visa.

For current fees, see the tuition and fees schedule.

In addition to tuition, you are required to pay other (ancillary) fees as part of student life at UVic and must arrange for appropriate medical insurance.

If you are studying at UVic as a non-degree student, you will pay for individual courses on a per-unit basis.

You are responsible for paying your own tuition and ensuring it is paid on time. If you are receiving funding for your studies, you may use that money to pay your tuition account. This is not done automatically. More information on tuition and fees, as well as payment options, can be found on the graduate finances page. That page also links to some additional budgeting considerations, such as living expenses.

## **Societies**

The official UVic society for Students In Graduate Mathematics And Statistics is known as SIGMAS. This society organizes social activities, including outdoor adventures, intramural sports teams, and weekly tea gatherings on Thursday afternoons in the 4th floor lounge. Fundraising is done through solved undergraduate final exam sales. More information can be found by visiting the SIGMAS web page.

The Graduate Students' Society (GSS) advocates for UVic graduate students, and also runs a number of important programs. Each department has a student representative. Students are encouraged to register for the weekly GSS e-mail bulletin. For more information, visit <http://gss.uvic.ca/>.

Our department is an institutional member of both the American Mathematical Society (AMS) and Canadian Mathematical Society (CMS). As such, our department has the right to nominate students as members. In the case of the AMS, student memberships are free

and typically automatic; in the case of the CMS, student memberships are currently at a (more than half) reduced price of \$20 per student per year. If you are interested in either of these (or other) professional societies, please contact the graduate advisor.

## **Graduate Co-Op Program**

The University of Victoria offers a co-operative education program and career services to assist students in preparing for post-graduation careers. You are encouraged to discuss such opportunities with your supervisor and a co-op advisor. By completing relevant 4-month work terms during your program you may receive salary, work experience, and a 'Co-Op' designation on your degree. Grad students are also eligible for a shorter 'Work Experience' designation. To get started, visit the Co-op and Career page.

Our co-op program office is located in Bob Wright Centre A239.

Grad students earn 3.0 units of credit for each co-op work term completed. These credits go toward the Co-Op designation; they don't replace the course and thesis credits units you need to complete your degree.

Note that you maintain full-time student status during work terms.

There is a work term fee in addition to program and other student fees.

If you are interested in either Co-Op or Work Experience, consult with your supervisor and a co-op advisor. If you plan to enrol, please inform the Graduate Secretary.

## **Learning and Teaching Support and Innovation**

The Division of Learning and Teaching Support and Innovation (LTSI) is at the heart of UVic's commitment to cultivate an extraordinary academic environment. Information on LTSI workshops, courses, and TA conferences can be found on the learning and teaching site.

The Learning and Teaching in Higher Education (LATHE) program focuses on the foundational principles and practical skills involved in post-secondary instruction. It challenges participants to reflect on their practical teaching activities in a scholarly way.

LATHE is a certificate program taken concurrently with your graduate program. There is an application process and certificate fee. For more information, find LATHE at the

LTSI website above, and contact one of the program co-ordinators.

## Some General Campus Info

**Bus Passes:** All graduate students registered in on-campus courses are automatically given (and pay fees for) a ‘universal bus pass’ (U-Pass). The U-Pass is valid on all transit routes in Greater Victoria and can be used any time during the semester.

To access your bus pass, you will need to use the UMO electronic bus fare system through either the UMO mobile app or using a reloadable UMO card. You may pick up a reloadable UMO card at the GSS front office. You will need to activate your bus pass through your UMO account at the beginning of every semester. For instructions on how to activate your bus pass, visit <https://gss.uvic.ca/about-gss/services/bus-pass/>.

**Health and Dental:** UVic has a medical clinic, a dentist, and counselling services on campus.

In the case of the medical clinic, you should bring your BC Care Card or other provincial services card to each visit.

**Insurance:** In 1999, a student referendum established an extended health and dental plan for students. Successive referendums have set the price and benefit levels of the plans. The plans are currently carried by Pacific Blue Cross, a non-profit insurance company.

You can pick up a benefit booklet from the GSS office, or find more information on the GSS health and dental page. Furthermore, the GSS Health and Dental Plan Coordinator is a good resource for specific questions about using your insurance. Their contact information and working days may be found on the GSS contact page.

**Athletics:** CARSA (Centre for Athletics, Recreation and Special Abilities) is a world-class venue providing state-of-the-art training, recreation, research and learning facilities. CARSA is designed to inspire excellence in physical, intellectual and social activity.

Membership to CARSA is not included in your tuition, but is offered at a discounted rate while you are registered as a student. To find more information on membership tiers and current pricing, visit <https://vikesrec.ca/membership>.

Information on recreation classes, intramurals, and Victoria Vikes varsity team sports can be found on the Vikes Rec page.

**Parking:** Parking permits may be purchased on a short term basis for hourly, daily or

weekly parking from parking dispensers on campus. Long term parking permits that are valid for one month may be purchased from the Campus Security building. For more information, visit the [Parking and Commuter Information Page](#).

**Campus Map:** A small reference map is provided on the back page of this guide; additional maps, including those for accessibility, parking, and planned construction, can be found at the [Campus Information page](#).

## 2 Financial Support

We endeavour to provide funding to all our graduate students.

Your personal funding offer is stated in the admission letter you received. Typically it comes in the form of fellowships and scholarships, which does not involve work other than that associated with being a student, thus this funding is not taxable. In most cases the sources of funding include supervisor research grants, Faculty of Graduate Studies (FGS) fellowships, Teaching Assistantships, and, in some cases, donor awards and other external sources. The department has recently adopted minimum funding levels: unless otherwise justified, minimum funding is set at \$8,000/year for Masters students and \$12,000/year for PhD students. This does not include earnings from TA work. As stated in the admission letter, the funding offer is continuing (2 years for Masters and 4 years for PhD) and is contingent on satisfactory performance, continued enrolment, and availability of funds.

Note that there is no automatic credit for tuition and fees, and that knowing the amounts and deadlines for these is your responsibility; please ensure that you plan accordingly. For information on tuition and fees at UVic, please see the UVic tuition costs page. It is important to understand that the different funding sources operate with different payment schedules, for instance, scholarships from research grants are paid on the 18th of each month, while FGS fellowships are typically paid in one or two instalments.

### Graduate Fellowships

The Faculty of Graduate Studies provides funding to graduate students of high academic standing in the form of fellowships. Our department is given a budget of graduate fellowship money each year. Amounts are allocated by the Graduate Committee starting late in the Spring Term and nominations are submitted to FGS in June. Students need not apply for these funds. In particular, new students are automatically considered based on their application files. Whether for new or returning students, many student support packages are partially funded from graduate award money. Amounts vary from year to year but a typical FGS fellowship in M&S is \$2,500 for a Masters student and \$5,000 for a PhD student.

FGS fellowships of less than \$3,500 are disbursed at the beginning of the first term. Larger amounts are paid in two installments at the start of two consecutive terms.

For more information, see the UVic awards page.

## Donor Awards

Special awards and scholarships are awarded each year to outstanding new or continuing students. Decisions on these awards are made during the Fall term, starting with a nomination from our department.

These awards are by nomination only. If you are being considered, the graduate committee may ask you for a brief CV, obtain reference letter(s) on your behalf, and/or attach your transcript to a nomination package. In some cases you may be invited to submit a short application.

The department has a couple of Donor awards dedicated to for our own students.

### **Betty and Gilbert Kennedy Graduate Scholarship in Mathematics and Statistics:**

*One or more scholarships are awarded to academically outstanding entering Masters or PhD students in the Department of Mathematics & Statistics. Approval of the recipients will be made by the Faculty of Graduate Studies Graduate Awards Committee upon the recommendation of the Department of Mathematics and Statistics.*

### **JJEM Graduate Award in Mathematics and Statistics:**

*One or more scholarships are awarded to second year graduate students of high academic standing in Mathematics and Statistics. Preference will be given to a student who is not receiving any major funding awards.*

A few other awards are relevant for students in the Faculty of Science. There is one general (semi-annual) award in this category.

David and Geoffrey Fox Graduate Fellowship:

*An award is given to a graduate student in either the Department of Greek and Roman Studies or the Faculty of Science. Selection will be made by the Graduate Awards committee upon the recommendation of the Department of Greek and Roman Studies in even-numbered years, and of the Dean of Science in odd-numbered years.*

Other donor awards are University-wide. For a full list of awards and eligibility terms, see UVic Awards.

## External Awards

Canadian students may be eligible for a Tri-Council (likely NSERC) Graduate Scholarship. Non-Canadian applicants and recent students may be eligible for a Vanier Scholarship.

These prestigious scholarships are very competitive. Recipients meet very a high standard for academic excellence and evidence of leadership. For more information on these and other NSERC programs, see the NSERC Postgraduate programs page. Early in the Fall term, the University hosts workshops designed to help you prepare a successful NSERC scholarship application. Information about such workshops is generally emailed to students. The Graduate Advisor can assist with general questions on the application, and your supervisor can offer advice on your research proposal.

Other awards may be relevant for you, such as scholarships funded by a company or by your home country's research council (the China Scholarship Council, for instance).

If you have earned a major external award before starting at UVic, you should notify the Department and the Faculty of Graduate Studies. As the holder of a major external award, you may be eligible for an additional top-up from UVic in the form of a President's Research Scholarship, or a Petch/Strong Award.

If you hold an NSERC scholarship, there are forms that you are responsible for submitting to NSERC. These forms can take some time to process, so make sure you submit them well in advance (neither the department nor the university will prompt you do so).

## **Research Assistantships**

Sometimes faculty receive funding for specific, time-limited, research projects and hire graduate students as Assistants. These assistantships are considered work, thus are taxable. While they do not necessarily align directly with thesis work, they provide very valuable experience and training. They are subject to different rules, and, similar to large external scholarships, they often substitute the initial funding offer for the duration of the project.

## **Fellowships, Scholarships, and Awards**

Some scholarships are incompatible with and thus replace, at least in part, some of the funding sources mentioned in your admission letter. Typically, large scholarships and fellowships provided by government agencies, like NSERC scholarships and BC graduate scholarships are announced much later than admission to the program, and trigger a reallocation of funding. The total amount of funding you receive will not be negatively impacted. In contrast, donor awards are offered in addition to the funding offer stated in

your admission letter. Although these are the norms in general, you should contact the Graduate Advisor for clarification on how a scholarship, fellowship or award will affect your funding if your situation is unusual.

## **Travel Grants**

Concerning conference travel, the Faculty of Graduate Studies offers travel grant funding. Travel and conference funding provided by FGS may only be used once per fiscal year. You may submit an application one-to-four months in advance of your conference. For more information and the application, visit the FGS travel fund page.

If you have worked as a TA in the 12 months prior to your conference, you can also apply for conference funding from CUPE 4163. You may only receive conference funding from CUPE once per academic year. For more information and the application, visit CUPE's conference funding page.

Many conferences, including CMS meetings, offer student travel support.

In some cases, you may be able to partially fund your conference travel through a supervisor's research grant; ask your supervisor if this is possible.

## **Emergency support**

The university has set up several emergency bursaries for students with emergent needs. Please note these are not scholarships and are a source of short-term financial aid for emergencies only. There is no deadline to apply for emergency bursaries, but you must be a full-time student during the semester in which you receive a bursary. For more information and instructions on how to access emergency support, please visit <https://www.uvic.ca/registrar/safa/bursaries/other/index.php>.

Additionally, if you have worked as a TA in the last 12 months, you may apply for emergency support from CUPE 4163 through their Component 1 Hardship Fund.



### 3 Courses

Graduate students select courses based on their interests and in consultation with their supervisor and supervisory committee.

All of our courses are valued at 1.5 units. PhD students with a Master's degree must complete a minimum of four courses (6 units). PhD students without a Master's degree must complete eight courses (12 units). Master's students normally complete a minimum of six courses (9 units), with the exception that a student in the project stream must complete eight courses (12 units).

You are required to obtain a minimum grade of B (73%) for each course.

#### Course Offerings for 2024-25

##### Fall 2024 offerings:

MATH: 413/529, 426/529, 435, 446/550, , 493/575 (Jun), 493/510 (Scully), 585 (Grad Seminar), 586 (Operator Theory Seminar), 587 (Applied Math Seminar), 588 (Discrete Math Seminar)

STAT: 452/552, 457/554, 458/568, 589 (Stats Seminar)

##### Spring 2025 offerings:

MATH: 401/538, 412, 424/529, 444/550, 451/555, 477, 585 (Grad Seminar), 586 (Operator Theory Seminar), 587 (Applied Math Seminar), 588 (Discrete Math Seminar)

STAT: 450, 453/558, 469/563, 589 (Stats Seminar)

Course descriptions are available in the UVic calendar. Scheduling and instructor information is available in the UVic timetable. Projected offerings for a given year are known roughly six months in advance.

Topics courses, such as MATH 529 or MATH 550, may be taken more than once with different topics.

## Fourth- and Fifth-year Courses

Some 500-level courses are also offered at the 400-level. Graduate students should register in the 500-level version only, but these courses may be taken by both graduate and undergraduate students.

Some 400-level courses may be taken as 500-level ‘topic’ courses. These offerings are often automatic and carry an appropriate subtitle. In other cases, the opening of a 500-level topics section to mirror a 400-level offering may be possible, but this is subject to permission of the Department.

In combined 400/500 level courses, many instructors require additional work of students in the 500-level cohort (e.g. a class presentation or challenge homework questions).

Some courses may only be taken at the 400-level. Master’s students may include up to two courses at the 400-level for credit in their program. PhD students may not include 400-level courses for credit in their program.

## Seminar Courses

All Master’s students are required to take the seminar course MATH 585. The course is also open to PhD students, although it counts for zero units in this case.

Below is a description from a recent course outline.

*MATH 585 is required for all Master’s students. It is a year-long course and runs from September-April; students must register for MATH 585 in both fall and spring semesters. It is recommended that Master’s students take 585 in their first year. Exceptions are possible; discuss your plans for 585 with your supervisor and the course instructor.*

*The main purpose of this course is to develop and hone your ability to communicate mathematically. This includes planning, organizing, and executing your oral presentations and written documents. We will explore some styles of communication with an eye for common standards in our discipline.*

*There will be opportunities to practice mathematically-based speaking at different levels of duration and with different styles. A secondary goal for the course is familiarity with mechanics useful for the math or stats grad student.*

In addition to Math 585, there are several subject-specific seminar courses which are

listed in the calendar. Although seminars are typically attended by interested students for no credit, the possibility exists to take such courses for credit. Discuss this with your supervisor and the seminar organizer if you are interested. A brief list is given below.

MATH 586: Operator Theory Seminar Ian Putnam

MATH 587: Applied Math Seminar Slim Ibrahim

MATH 588: Discrete Mathematics Seminar Natasha Morrison and Jon Noel

STAT 589: Statistics Seminar Xuekui Zhang

## Pro forma and Directed Studies Courses

A pro forma registration form is required to assign a course number for specialized courses not shown in the calendar. It is typical to use ‘MATH 581: Directed Studies’ as a shell. The Graduate Secretary can guide you through the process of setting up a pro forma registration.

If you are planning to attend an intensive short course or summer school hosted off-campus and wish to have it counted as UVic course credit, speak to the graduate advisor well in advance. Graduate transfer credit or a pro forma may be used, depending on the situation.

## Courses for credit

The Faculty of Graduate Studies requires any course taken for credit with a grade below 5.0 (73%) to be reviewed by the supervisory committee of a student and the department’s graduate advisor. The supervisory committee is expected to make a recommendation to the Faculty of Graduate Studies. The following options are deemed acceptable by the Graduate Admissions and Records Office:

- (a) the student repeat the course and achieve a grade of at least B (73%);
- (b) the student take a replacement course;
- (c) the student is allowed to continue without remedial action or;
- (d) the student be allowed to continue subject to raising their GPA in the next session.

Note that if option (a) or (b) are recommended, the supervisory committee may require a grade higher than 73% be obtained.

Options (a) through (d) be only be used at most twice in a student's program.

A grade below 73% being obtained in three or more courses will result in termination of the program. In extreme cases, such as the obtainment of a "F" or "N" (a grade < 50%), termination of the program may be recommended earlier.

Please see the Policies for Unacceptable Course Work for more information.

## 4 Candidacy Exams

Within the first 8 months of the beginning of your PhD program, your supervisory committee will meet to create a plan for you to advance to candidacy. The plan will include details such as: (a) a description of which written or oral examinations are required; (b) approximate dates; and (c) clear minimum standards.

PhD students are required to pass three candidacy examinations within the first two years (24 months) of study.

### Written Exams

A candidacy plan may include written exams in various subjects. Each exam typically lasts three hours. Standard subject exams are:

- Foundations of optimization
- Numerical analysis
- Ordinary differential equations and dynamical systems
- Partial differential equations
- Real analysis
- Topology
- Algebra
- Combinatorics
- Graph theory
- Probability and stochastic processes
- Statistical inference
- Applied statistics

For each of the above subjects, there is a standard syllabus and sample exam(s) available on Sharepoint. To access the Department Sharepoint site, contact the Math and Stats Systems Administrator.

To request an exam, complete a candidacy exam request form, available on the department candidacy exams page.

Your exam invigilators should be contacted for more detailed information on the topics to be covered, especially optional topics to be emphasized or omitted. It is your right to know the grading structure of the exam and what expectations exist to pass the exam. Please ask your supervisor and exam invigilators about what to expect in this regard.

## Substitutions

Your committee may agree to allow an extra course, with first-class minimum grade, in place of one written candidacy exam. This is intended for topics which are for breadth and rather distant from your primary research area. This option is also intended for situations in which you are the only student interested in a candidacy exam at a given time and where there is a corresponding course.

Alternatively, your committee may recommend a “dissertation preparatory examination” as one candidacy component. This examination typically involves a written document, accompanying oral presentation, and answering questions on the topic. In order to pass the examination, you’ll need to demonstrate to your committee, through the written paper, the presentation, and the answers to the committee’s questions, that you are prepared to start work on your dissertation.

The written document should demonstrate your mastery of the corresponding topic. It generally consists of a study of material needed in preparation for your dissertation work. Some possibilities for the content of the paper are:

- a research plan for a dissertation, setting out methodology and background work, putting it in context with related work;
- a literature survey setting out prior knowledge in an area and presenting it in a unified and thoughtful way;
- a new result, typically as an initial step in your dissertation research.

This list is meant to suggest the scope of possibilities, rather than an exhaustive list.

A date for the examination should be selected and agreed upon by you and your supervisory committee. The written paper should be submitted to the committee at least 10

working days before the date of the presentation. The presentation may be fairly brief (about half an hour), with additional time after the presentation to answer questions from your committee.

## **Repeating Exams**

Failing an exam or project will result in a meeting between you and your supervisory committee to discuss a remedy. If the subject is deemed essential, you have one further attempt at the exam or project. In other cases, a different subject exam may be attempted.

Failure of the same subject exam twice or three subject exams in total will result in termination of your program. Extenuating circumstances will be considered. It is encouraged that students discuss any difficulties with their supervisor or the graduate advisor prior to the exam and postpone their exam to a different term, if necessary.

## **Feedback**

Your supervisor or written exam invigilators will endeavour to inform you of the result of your exam within one week. You may request to view written exams up to two weeks after you are informed of the results. Additional feedback on the exam and how it fits with your overall candidacy progress can be discussed with your supervisor or the graduate advisor.

If you believe the result of your exam was incorrect or unfair, contact the graduate advisor or department chair as soon as possible.

## **Extensions**

If you anticipate difficulties meeting the 24 month deadline for candidacy due to medical or personal difficulties, you should discuss this with the graduate advisor. You may be directed to complete a candidacy extension request form. The Faculty of Graduate Studies typically approves such requests, provided there is a concrete plan to finish the following term.

## **Other Requirements**

As a PhD student, your supervisory committee may require you to demonstrate reading proficiency in one of: French, German, or Russian. If this is expected of you, it should be communicated clearly to you by your supervisory committee.



## 5 Teaching and TA Work

### Teaching Assistantships

A teaching assistant (TA) is an individual who assists with instructional responsibilities. Every year, our department has a number of TA positions available in the fall and spring terms, as well as a much more limited number of positions available in the summer term. Graduate students are encouraged to apply for TA positions according to their qualifications, career goals, and financial need.

When recommending TA appointments to the department, the TA Coordinator's primary concern is the quality of our courses. Necessary qualifications for each TA position are outlined in that position's posting.

The terms and conditions of TA positions are covered by CUPE Local 4163 (Components 1 & 2) Collective Agreement, and up-to-date pay rate information can be found on their website.

### Important Dates

In accordance with the collective agreement, we normally post positions no later than twelve weeks in advance. For example, Fall positions are usually posted in early June. All current and incoming graduate students in the department will be notified of this posting by the department's Administrative Officer, so make sure to read any correspondence from [aofficerms@uvic.ca](mailto:aofficerms@uvic.ca) carefully. Applications are submitted through an online form, and you will need to fill out a new application for each term in which you would like a TA appointment.

Because these postings are so early, there may be several weeks between the job posting date and the application due date. This can make it easy to forget, so please do not put off your application until the last minute; applications received after the posted deadline are considered late, and late applicants might lose their priority ranking.

## Types of TA Positions

A typical TA appointment for a first-time TA is approximately 98 hours per term, spread over 12 - 13 weeks depending on the courses involved. This means a new graduate student can generally expect 196 hours of work in their first year, possibly more if enough positions are available.

There are three general types of TA positions, and a TA Appointment can be divided between one or more of them:

- **Markers** are TAs who mark for a specific course. For large courses, there is generally a team of markers who either work together to team-mark assignments or who divide the assignments between them and mark individually. Markers must be able to accurately evaluate student work in a specific course. Markers report directly to the course instructor or course coordinator.
- **Assistance Centre Tutors** are TAs who tutor in our Math & Stats Assistance Centre (AC). Tutors must be able to assist with a variety of first- and second-year math and/or statistics courses. Tutors report to the Math & Stats Assistance Centre Manager and Coordinator.
- **Tutorial leaders** are TAs who lead 50-minute “tutorials” for specific courses. The structure and size of tutorials depends on the course and on the course coordinator. Tutorial leaders report directly to the course coordinator, and in some instances a Senior Lab Instructor.

## TA Position Progression

A first-time TA is usually appointed to mark for one or several courses, although TAs who come to us with previous teaching experience are sometimes interviewed for a position in our Assistance Centre in their first term. It is helpful to spend your first term marking for our courses before jumping into the Assistance Centre – it gives you a chance to see how our instructors run our courses and what our students are like.

After a term marking for the department, you might consider applying for an Assistance Centre position. There is an interview process for prospective AC tutors, to make sure that we hire TAs with reasonably broad content knowledge who also have strong communication skills and are comfortable interacting with students, including students in distress. You are also welcome to continue applying only for marking positions if that is

what you prefer to do – experienced markers are always in demand! Most first-time AC tutors also continue to mark for at least one course.

After at least one term in the Assistance Centre you would be eligible to apply for a position leading tutorials. Any graduate student who is interested in a career in academia or education is strongly encouraged to apply for a tutorial leader position, particularly because it is unusual for a graduate student to be considered for a Sessional Instructor position (see below) if they have not yet led tutorials.

Some of our instructors prefer tutorial leaders who also mark for the course, and the Assistance Centre manager likes to have some AC tutors who are also leading tutorials, so most of our senior TAs have TA Appointments that are a combination of two or more types of work.

## **TA Training and Professional Development**

Every time you start a new type of TA position, you will be required to attend a training workshop with the TA Coordinator (Jane Butterfield). There is also a CUPE Orientation session every term, which we schedule to take place before or after the workshop for new markers. Attendance at required training sessions is considered time worked, which means you are paid to attend these workshops.

In addition, the TA Coordinator periodically offers professional development workshops designed specifically for Math & Stats TAs and future educators. The Learning & Teaching Centre also offers workshops throughout the term, some of which are appropriate for Math & Stats TAs.

You are encouraged to meet with the TA Coordinator if you ever have questions or concerns about your work or your supervisor, if you want advice about your work, or if you just want to talk about education in general.

If you are leading a Tutorial, you are encouraged to request a teaching observation from the TA Coordinator at some point. This is especially important if you are likely to request a letter of recommendation in support of teaching! If you would like a formal record of the observation, you can request a form or a letter. This is for you to include in your Teaching Dossier; unless you request it, an observation form will not go into your TA file or your student file, and will not be used for subsequent TA appointments. You might request the form to be made available in support of your application for a sessional appointment, or you might include it in your TA applications in subsequent terms, if you wish.

## Resources

**Mailboxes:** Most supervisors make extensive use of the department mailroom (DTB A427) mail boxes for passing work to their TAs and getting work back from them. Make sure you know where your mailbox, your supervisor's mailbox, and any other relevant mailbox is (for example, you might collect work from your students to pass on to a different TA, or you might be handing in grade sheets to the Senior Lab Instructor). See the General information section.

**Photocopier:** Most TAs will not need to make photocopies, but if you do, you have access to the photocopiers in the department mailroom. Again, information on this can be found under General information.

**Textbook:** Ask your supervisor if you will need a copy of the textbook in order to do your job. If so, anyone in the department's general office (DTB A418) should be able to check one out to you. It is important to return the textbook at the end of the term, as we get only a few copies from the publisher.

**Marking supplies:** You can find coloured pens for marking in the department mail room. Please be considerate of others in the department who also need red pens! Most markers will also be responsible for recording student grades, which often requires computer access. Please let the TA Coordinator know if you do not have access to a computer that is private enough to maintain the confidentiality of your students' records.

If there are any other resources you need to do your job, but cannot find, please ask!

## Hiring Priority and Appointment Sizes

The Department of Mathematics & Statistics follows the Appointment Priority Policy A, laid out in the CUPE Local 4163 (Components 1 & 2) Collective Agreement.

In particular, graduate students from our department who are in their first or second year of a Masters program or their first through fifth year of a Ph.D. have priority over other graduate students, undergraduate students, and non-students.

In accordance with the Appointment Procedures in the Collective Agreement, appointments to particular positions are made based on the qualification and ability of the candidates in question; if two or more applicants are tied within a priority category and are otherwise equally qualified for a particular position, then seniority will be the tie-breaker.

TA work and other teaching opportunities play an important role in the professional development of future academics. We recognize, however, that our graduate students are students and researchers first, and expect that our graduate students will usually spend at least half their time on course work and research.

Hours spent on TA work is in addition to this time, and so graduate students may request appointments of less than 98 hours in a term if they wish. On the other hand, it is unusual for a graduate student's TA appointment to exceed 140 hours in a given term.

## **Graduate Student Sessional Appointments**

Sessional Instructors are full teachers: they give lectures, holds office hours, and design assignments and tests in collaboration with other instructors and their coordinator or faculty mentor – see below. This is a more intensive teaching experience than TA positions, and for graduate students interested in pursuing a career in academia, a Sessional Appointment can be valuable work experience.

Sessional Appointments, as you can imagine from that description, require a significant time commitment. The terms and conditions of Sessional Lecturer positions are covered by the CUPE Local 4163 (Component 3) Collective Agreement, and up-to-date pay rate information can be found there.

In the fall of each year, usually late in the term, a form is distributed to Graduate Students asking them to declare an interest in teaching during the following academic year (May through April). You must have permission of your supervisor to be considered for a sessional teaching assignment. A teaching CV will also be requested along with completion of this form.

Graduate students, post-doctoral fellows and continuing sessionals have priority appointment processes; offers will generally be made to Graduate students in late January, late May, and late September for teaching in the following term.

Any remaining positions are posted in an open competition at the beginning of February, June, and October. This posting is sent to all graduate students, continuing sessionals, and other interested parties. This position usually closes within two weeks and offers are made within two weeks of the position closing. Applicants for these positions will also be considered for any additional positions that may open up after the posting has closed.

## Guiding Principles of Grad Student Teaching Requests

- Sessional teaching is an important component of a doctoral student's teaching dossier, and an integral part of their learning. The Department of Mathematics and Statistics strives to ensure that PhD students graduate with a well-rounded teaching dossier.
- Coursework, research and thesis completion is, however, the primary objective for all students and must remain paramount. In order to support a well-rounded student development, the department may limit sessional teaching assignments to 1 section per academic year.
- It is preferred that students will have demonstrated teaching effectiveness developed through the TA position progression prior to being offered a sessional teaching appointment;
- Initial teaching assignments will often be made in Spring or Fall in co-ordinated courses in order to provide supervision and mentorship throughout the first assignment;
- Faculty mentors will be assigned for all new instructors;

## Support for Graduate Student Sessional Instructors

Faculty mentors and course coordinators will guide and mentor grad student sessional instructors, as they would any other sessional instructor assigned to their course. For questions of course design (including course outlines) and assessment instruments (particularly midterms and final exams), your course coordinator or faculty mentor is the best resource.

The department's TA Coordinator and Teaching Specialist, Jane Butterfield, is also happy to meet with you at any time in the term. Drop by for a casual conversation, ask for a second opinion on a tricky student email, or request a teaching observation to include in your teaching dossier. She can also recommend further resources, such as Learning & Teaching Support and Innovation (LTSI) workshops or presentations at the Centre for Academic Communication.

The LATHE Graduate Certificate pairs well with sessional teaching work. Although it is not a requirement for teaching, Doctoral students can take LATHE the year before a sessional appointment to get a head start on the scholarship of teaching. A brief

summary of LATHE can be found in the introductory material of this handbook, and more information can be found here.

## 6 Project/Thesis/Dissertation

Graduate students in our department finish their programs with a substantial written document. The name of the type of document depends on your program. Students enrolled in the Master's program write a 'project' or 'thesis'. Students in the PhD program write a 'dissertation'. Any of these may be informally called a thesis.

### Style and Structure

There is a thesis format checklist and sample pages available from the Faculty of Graduate Studies. Visit the FGS page on Scope, Structure & Format for additional information and resources.

In addition, a comprehensive resource for mathematical writing can be found at Doug West's web page.

The following is some very general structural guidance; it should be interpreted as loosely as possible. Typically, an introductory chapter outlines or sets up the main results and findings of your thesis. (In a timeline of writing, this can be done close to last.) Background material might come in the next one or two chapters. (This can be written early on, since it relies heavily on existing literature.) Detailed findings follow in the body of the document. This is where the bulk of new work occurs. It is nice to include a forward-looking conclusion, where some possible future directions of the research might lead. (Such a chapter is obviously best left until after you've reflected on the body for some time.) Your particular topic may be suited to a slightly different style of presentation or ordering of writing; you and your supervisory committee know best here. Generic FGS resources are available for further reference.

The graduate group SIGMAS has created a thesis template in  $\LaTeX$ . If you choose to use this template, it is your responsibility to ensure it satisfies current FGS guidelines.

If you publish a paper or series of papers from a part of your thesis, please attempt to set the work into proper context of a larger document. In fact, it may be advisable to construct publications after the corresponding thesis chapters are in mostly stable written form. Discuss a publication strategy with your supervisor.



## **Some Planning Info**

In consultation with your supervisor or committee, it is useful to have at least a somewhat formal thesis completion plan. In particular, you should anticipate many rounds of edits in the late stages of your thesis writing. Your supervisor (and possibly other committee members) may want drafts to annotate with their comments. It is important to set a schedule of drafts and edits with your committee.

## **UVicSpace**

When finished, your thesis or dissertation will be placed in the University of Victoria's electronic collection, UVicSpace. This is a virtual shelf on the library website of published projects, theses and dissertations. Some students will have publishers interested in publishing their work, or have sensitive patent information in their thesis. If this is the case, you will likely want to (at least temporarily) withhold your work from publication in UVicSpace. To do this, you can complete a withholding form.

## 7 Finishing Your Degree

### Preparing to Graduate

Inform the Graduate Secretary in the first month of the term you wish to finish. As a reminder, each term the Graduate Secretary will e-mail students with deadlines and information regarding defending that term.

You should discuss a timeline for completion with your supervisor. In particular, plan a suitable date for your final oral exam (defense). To allow time for changes to your thesis your committee might request, this date should ideally be before the last two weeks of the term.

To ensure that you are able to finish in the desired term, notify the Graduate Secretary at [gradsecms@uvic.ca](mailto:gradsecms@uvic.ca) with your agreed-upon defense date/time and any audio visual needs. The Graduate Secretary will reserve a room and/or create a videoconferencing link for your defense and help you ensure the necessary documents are completed in time.

With a plan in place for your defense, finish the final edits of your dissertation/thesis/project. Plan for one to two weeks for your committee to agree that it represents an examinable document.

Also plan to allow one to two weeks after your defense to make final changes before submitting your thesis to the library and the FGS.

### Prior to Defense

1. Make sure you apply to graduate. Application for graduation forms can be found in the Academic calendar important dates.

Check the Registrar's website for more information about these deadlines.

2. Submit your thesis/dissertation in PDF format to the Graduate Secretary, along with your Request for Oral Exam (ROE).
3. Conduct a review of your program requirements and CAPP form. In particular, ensure all courses are listed correctly on your CAPP and contact the Graduate Secretary if there are any errors or omissions.
4. Submit an ROE (Request for Oral Examination) or, in the case of a project-based oral, a Non-Thesis Checklist. Note that this will require collecting signatures of

your committee members and the graduate advisor. Committee members will often want to see your thesis before signing the ROE, so allow some time. You should submit your ROE to the Graduate Secretary before 3pm on the date determined as follows:

Master's project	5 working days after defense
Master's thesis	20 working days prior to defense
PhD dissertation	30 working days prior to defense

Be careful not to count statutory holidays or weekends in these setback dates.

5. Prepare your oral presentation, which is a roughly 15 minute summary of your work occurring at the start of your defense. Also, try to anticipate possible questions that might come from the examining committee. You might find it helpful to hold a mock defense with some student friends, or even something more formal arranged through your supervisor.

The oral examination has a chair appointed from outside the department to represent FGS. Students may find it helpful to review the Chair's Guidelines for conducting exams.

For PhD students, once an ROE and defense documentation is submitted to FGS, neither you nor your supervisor can have contact with the external examiner. In particular, you may only inform the external examiner of any video-conferencing connection details before ROE submission. After that, you must let the Graduate Secretary act as a proxy for communicating any defense information to the external examiner.

## After Defense

Submit all of the required documents, signed by those present with an original signature, to the Graduate Secretary. They will be submitted to GARO on your behalf.

Submit your thesis to UVicSpace. For access, you will need to contact our GARO clerk at [grad2@uvic.ca](mailto:grad2@uvic.ca).

The deadline for completing all requirements, including submitting documentation, is 3pm on the final business day of the current term. **This is a serious deadline; do not miss it.**

## **Postponement**

Students who miss deadlines or have defended their project, thesis, or dissertation within the first 15 days of a term may be eligible for the ‘Completion Postponement Fee Adjustment’ (\$255) in lieu of a full tuition fee payment. Eligible students will have paid their minimum total program fee prior to the term in which the oral examination takes place and registered in the term in which the oral examination takes place.

A full term of ancillary fees will be charged in addition to the CPFA.

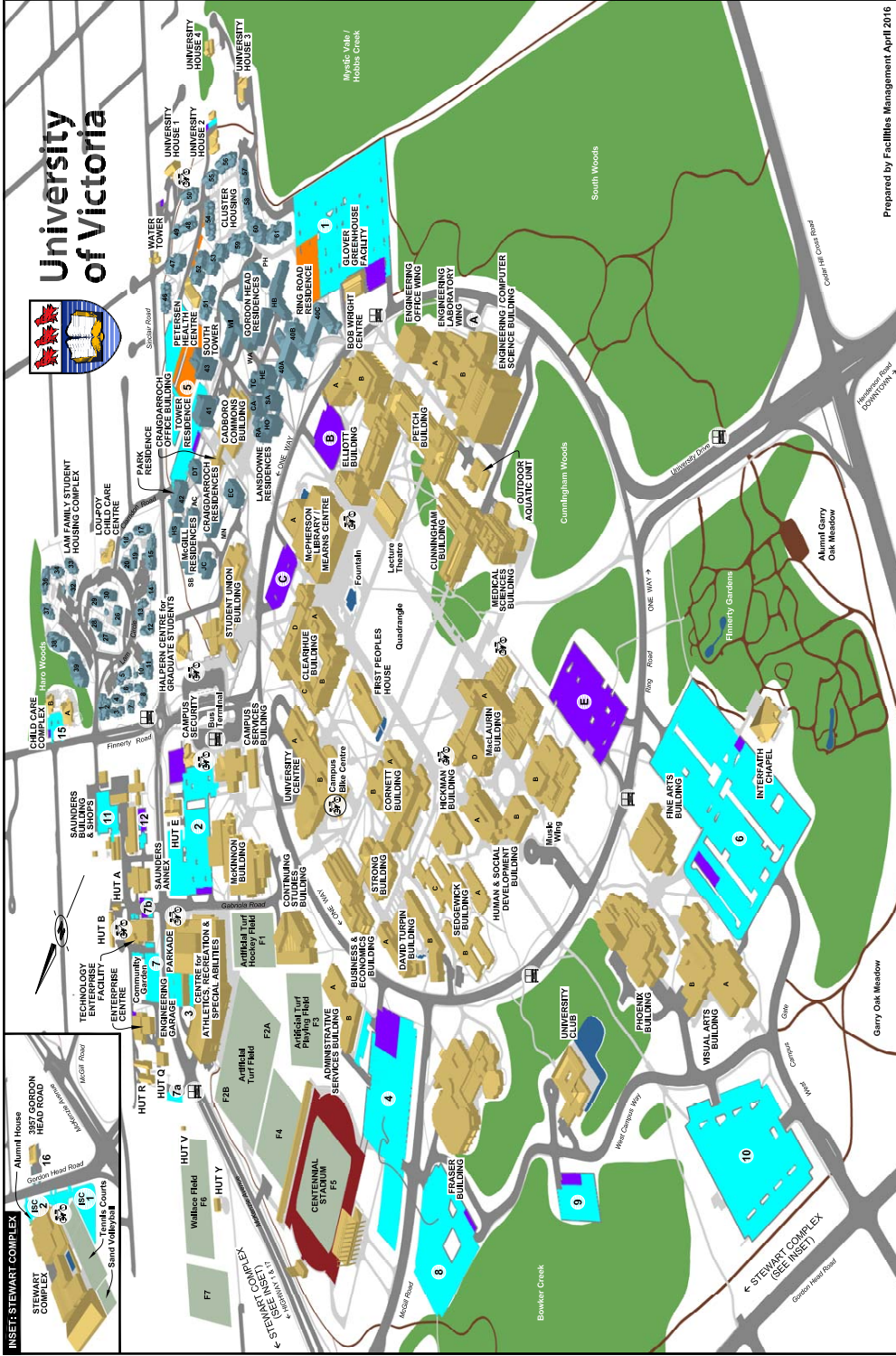
Students making use of the CPFA will not be eligible for graduation in the term in which they defend. Students completing under the provisions of the CPFA in September or January will graduate in the spring, and students completing under the CPFA in May will graduate in the fall. For further information, contact Graduate Admissions and Records.

## **Final Arrangements**

You will need to clear out your office space and mailbox by the last week of the term in which you defended. If you require the office space past the end of term, please contact the admin officer at [aofficerms@uvic.ca](mailto:aofficerms@uvic.ca). When you are finished with your office, don’t forget to return your keys and any textbooks/materials that were borrowed.

Be sure to provide the office staff with a forwarding address.

Good luck and stay in touch!



Prepared by Facilities Management April 2016

### RESIDENCE KEY

CRAGDARROCH	GORDON HEAD	LANSDOWNE	McGILL
AC - CURRIE	HB - HARG-BROWN	CA - CARROLL	SE - BAKER
DT - THOMPSON	PH - POOLE	HE - HELMCKEN	JC - CUNLIFFE
MM - NEWTON	WJ - WILSON	RA - RAYVENHILL	HS - STEPHEN
		SA - SANDERSON	TC - TRUTCH

### LEGEND

	BUILDINGS		GENERAL PARKING		PLAYING FIELDS		BUS STOP
	RESIDENCES		RESERVED PARKING		FORESTED AREAS		BICYCLE SHELTER
	BUILDINGS UNDER CONSTRUCTION		STUDENT RESIDENT PARKING		WALKING TRAIL		

### LEGEND

	BUILDINGS		GENERAL PARKING		PLAYING FIELDS		BUS STOP
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