Graduate Programs

Overview

The University offers the following graduate degrees:

- Master of Arts (M.A.) or Master of Science (M.Sc.) – Individualized Program (thesis-based)
- Master of Education in Educational Studies and Leadership (M.Ed.) (course-based)
- Master of Arts in Educational Studies (M.A.) (thesis-based)
- Master of Science in Computer Science (M.Sc.) (course-based and thesis-based)
- Master of Science in Physics (M.Sc.) (thesis-based)
- Micro-Program in Climate Change
- Graduate Certificate in Knowledge Mobilization
- Graduate Certificate in Teaching and Learning in Uncertain Times
- Graduate Certificate in Teaching and Learning in an Uncertain World
- Graduate Certificate in Culturally and Linguistically Responsive Teaching for All
- Graduate Certificate in Teaching Intensive English
- Doctor of Psychology (PsyD) in Clinical Psychology (Specific regulations can be found at: *www.ubishops.ca/wp-content/uploads/PsyD-Academic-Calendar-Senate-approved-May19-2023-updated-Sept18.pdf*)

Regulations for Graduate Studies

Academic Regulations

1. Minimum period of registration

   Apart from any qualifying semesters, the minimum period of registration for a Master's degree shall be one academic year of full-time study from the time of initial registration in the program, including research, or its equivalent in part-time study. This requirement must be met regardless of the amount of graduate work previously completed in any other program or at any other university.

2. Time limit

   a. Graduate Micro-Programs and Certificates. The maximum time allowed for the fulfillment of the requirements for graduation for a Graduate Micro-Program or Certificate degree shall normally be two years (six terms) in the case of full–time students from the time of initial registration in the program, excluding any qualifying or inactive semesters. For part-time students, the maximum time allowed for the fulfillment of the requirements for graduation for a Graduate Micro-Program or Certificate degree shall normally be three years (nine terms).

   b. Master's degrees. The maximum time allowed for the fulfillment of the requirements for graduation for a Master's degree shall normally be three years (nine terms) in the case of full–time students from the time of initial registration in the program, excluding any qualifying or inactive semesters. For part-time students, the maximum time allowed for the fulfillment of the requirements for graduation for a Master's degree shall normally be six years (18 terms). Requests for extensions due to special circumstances shall be directed to the Dean of the School/Faculty concerned.

3. Students may choose to leave a program temporarily for 52 weeks, but only with permission of their supervisor(s) and Dean(s) of the Faculty(ies)/School(s) concerned; these students shall be considered inactive for that semester. Such a leave of absence from the program will not normally be allowed more than twice.

4. Students must obtain a minimum of 65%* or "P" in each required course. A grade less than 65% or "F" is considered a failure. Courses may not be repeated more than once.

   **M.Ed./M.A. students who receive a grade lower than 70% have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.*

5. Unless special arrangements have been made, each degree candidate will be assigned, by the department in which the thesis is to be submitted, to a supervisor(s) who shall be a faculty member of the department and who will be responsible for advising the candidate and directing their research. Co-supervisors may also be assigned with the concerned department's approval.

6. The course of study will generally be overseen by the supervisor(s).

7. The subject of the thesis requires approval by the supervisor(s).

8. The responsibilities of the students include:

   a. informing themselves of program requirements and deadlines;

   b. working within these deadlines;

   c. communicating regularly with their supervisors; and

   d. submitting annual progress reports to the Office of Research & Graduate Studies who will then make it available to the Dean(s) of the Faculty(ies)/School(s) concerned.

9. Students may receive (limited) financial support from the University in the form of research assistantships, undergraduate marking, tutoring and/or laboratory demonstrating duties. Such support requires approval in writing from both the supervisor department and the Dean(s) of the Faculty(ies)/School(s) concerned.

10. All students in graduate courses or degree programs are bound by the University's academic regulations, policy and procedures on academic review and appeal (see pp. 21–24 of the University Calendar) and on research ethics (see the Office of Research & Graduate Studies for documentation).

11. Full-time status for graduate level studies is defined to be 9 credits or more.

12. Students who have not enrolled or registered in any course during a period of more than 24 months are deemed to have withdrawn; and may choose to reapply for admission to the program, subject to the same procedures and conditions as new applicants.

Advanced / Transfer Credits

13. Students applying to a graduate program may receive **advanced credits** towards their degree requirements. With the agreement of the Departmental Chair (or delegate) and, if relevant, the thesis supervisor, students who have earned graduate-level credits prior to their admission (e.g., from a different university, in a different Bishop's graduate program, as an undergraduate, or as a general interest student) may receive up to 9 advanced credits, provided that they:
    a. Received a grade of at least 75% (or equivalent) in the course(s);
    b. Completed the course(s) within the last ten years.
14. After admission, students may receive **transfer credits** for courses completed elsewhere. A graduate student may, with the permission of the Departmental Chair (or delegate) and, if relevant, their thesis supervisor, complete up to 9 graduate-level credits at another recognized institution. Students must obtain prior approval for such courses. The total number of credits taken elsewhere (including both advanced and transfer credits) must not exceed 9 credits.
15. It is the responsibility of the supervisor(s) to confirm with the Office of Research & Graduate Studies students under their supervision when a student enrolls in a thesis-based degree program.

Supervision Regulations

16. It is the responsibility of the supervisor(s) to monitor the progress of students throughout the graduate program, to ensure that all conditions of admission and requirements are fulfilled, to provide students with information on their program, and to advise them how to resolve problems which may arise during their program.
17. Thesis supervisors must be tenured or tenure-stream faculty. With the department's approval, Adjunct Professors are allowed to serve as supervisors, provided that a tenured or tenure-track faculty member is also appointed as a co-supervisor. Limited Term Appointments, Contract Faculty, and Emeritus Professors may co-supervise students with the department's approval. In all cases, the Departmental Chair must ensure continuity of appropriate supervision of their graduate students.
18. Problems that cannot be resolved by discussion between the student and the supervisor(s) shall be referred to the Dean(s) of the Faculty(ies)/School(s) concerned.
19. Information concerning sources of financial support and policies on obtaining same should be sought from the Graduate Studies Coordinator in the Office of Research & Graduate Studies.
19. Students must receive guidance and constructive criticism concerning their progress on a regular basis through the program, including regular meetings and/or e-mail communication with supervisors, attendance at research seminars, and appropriate responses to the student's annual progress report.
20. Supervisors and Graduate Students are expected to abide by the Guidelines for Graduate Student Supervision that have been outlined by the Canadian Association for Graduate Studies.

Monitoring of Student Progress

21. Note that the academic regulations 21 through 27 may be superseded by policies used to monitor student progress in existing, stand-alone graduate programs.
22. Students must receive guidance and constructive criticism concerning their progress on a regular basis through the program, including regular meetings and/or e-mail communication with supervisors, attendance at research seminars, and appropriate responses to the student's annual progress report.
23. At the start of the second semester, the Graduate Studies Coordinator will send separate confidential emails to the supervisor and the student to check for any significant concerns. Minor issues will be resolved, if possible, by the Graduate Studies Coordinator. In the case of major concerns, a formal meeting will be scheduled between the student, the supervisor, and the Graduate Studies Coordinator or delegate.
24. At the end of their second term of studies in a thesis-based program, and every third semester thereafter, registered M.A./M.Sc. candidates must submit an annual progress report to the Office of Research & Graduate Studies covering both courses and research programs.
25. The relevant forms to be completed by the candidate and the supervisor(s) are available through the Office of Research & Graduate Studies. Annual progress reports will be reviewed by the Graduate Studies Coordinator. The candidate and the supervisor(s) are expected to meet to discuss the content of the report. At this meeting, the supervisor and student should discuss the following components of the Annual Report:
    a. Record the progress made during the prior year, including completed courses and research milestones.
    b. Establish objectives for the upcoming year.
    c. Review the remaining requirements for completion of the graduate degree and set out timelines for their completion.

    In the case of an unsatisfactory report, the following procedure will be followed:

    d. The Graduate Studies Coordinator will convene a meeting between the supervisor(s), the Departmental Chair, and the student (who can be accompanied by a community member) to set interim goals and to identify ways in which to better support the student. A summary of the meeting will be sent to the Graduate Studies Coordinator.
    e. No later than four months after the submission of the Unsatisfactory report, the supervisor(s), Departmental Chair, and student will meet to assess progress towards the interim goals and the effectiveness of the support measures. If progress is judged satisfactory by the Supervisor, the timing of the next progress report will be determined by Article 23. If progress is judged unsat-

isfactory in this second report (the interim report), The academic unit can request that the student be asked to withdraw from the University. Students have the right to have this decision reviewed, first by the Dean(s) of the Division(s)/School(s) concerned and then by the Academic Review Committee.

f. An unsatisfactory progress report may result in the non-renewal of a Graduate Research Scholarship.

g. Two unsatisfactory reports (not necessarily successive) constitute unsatisfactory progress towards the degree and, if recommended by the academic unit, the student will be withdrawn from the University. Students have the right to have this decision reviewed, first by the Dean(s) of the Division(s)/School(s) concerned and then by the Academic Review Committee.

26. In cases where the student has missed an established progress report deadline and has not responded to the unit within 4 weeks after being contacted by the academic unit, the report may be completed in the student's absence, and progress may be judged unsatisfactory.
27. Reports are to be housed with the Office of Research and Graduate Studies and retained for three years following graduation/departure from the university.
28. Copies of the annual progress report will be made available to the Dean(s) of the Division(s)/School(s) concerned as well as the Chair(s) of the Department(s)/School(s) concerned upon request.
29. Note that renewal of a Graduate Research Scholarship (GRS) is dependent upon a satisfactory progress report.
30. The role of the Graduate Studies Coordinator, throughout the Monitoring of Student Success, is to review submitted reports and oversee administrative tasks related to the overall process of monitoring student success. Concerning/alarming reports will be submitted to the Associate Vice-Principal Research who will ensure they are addressed accordingly.

Thesis Regulations

31. Note that the thesis regulations 30 through 39 may be superseded by policies in existing, stand-alone graduate programs.
32. All Master's candidates must make a satisfactory oral presentation and defense of their thesis prior to graduating before an Examining Committee.
33. Composition of the Examining Committee

    a. At the graduate level, the Examining Committee is composed of at least three members, including the candidate's supervisor(s). Of the three members, one shall be an external examiner*, who must be external to the Department and cannot be in a supervisory relationship with the student, be a co-author of work included in the thesis, or be in any conflict of interest with the candidate. All examiners must be specialists in the candidate's field of interest with at least a terminal degree in the field and graduate supervision experience. The examiners shall be selected by the supervisor(s) and department concerned.

    ** The requirement of an external examiner on Examining Committees in Computer Science may be waived under exceptional circumstances.*

34. Submission of the Thesis

    b. At the graduate level, a single digital copy of the thesis of a degree candidate must be submitted, with the approval of the supervisor, to the Office of Research & Graduate Studies at least two months in advance of the marks deadline of the semester in which it is to be defended. The submission must be accompanied by a letter from the supervisor(s) informing them of the names of the members composing an Examining Committee. The Office of Research & Graduate Studies shall forward one copy of the candidate's thesis to each examiner with an appropriate covering letter.

35. A thesis will be accepted only following approval of its defense by the Examining Committee. A thesis may be returned to the candidate for revision on the advice of one or more examiners and subsequently re-defended (once only).
36. The decision of the Examining Committee is made by majority vote. All members* have access to a vote. Members of the Examining Committee may not abstain from voting, except for supervisors in cases where the Examining Committee is made of more than three members.

    ** In cases of joint supervisions, the primary supervisor(s) and the co-supervisor(s) count as a one (1) member of the Examining Committee and have access to one (1) joint vote have a joint vote.*

37. The decision of the Examining Committee shall be based on both the thesis and on the candidate's ability to defend it. The Examining Committee shall submit a report to the Dean(s) of the Faculty(ies)/School(s) concerned. The Examining Committee can render one of four decisions:

    c. Accepted as submitted, which may include editorial/formatting corrections;

    d. Accepted with minor modifications (corrections which can be made immediately and to the satisfaction of the supervisor);

    e. Accepted with major modifications (precise descriptions of the modifications shall be provided by the Examining Committee in the report submitted to the Dean(s) of the Faculty(ies)/School(s) concerned). The Examining Committee shall examine the revised thesis and determine if the modifications made are satisfactory, in which case the Examining Committee may confirm the approval of the thesis, or unsatisfactory, in which case the Examining Committee must determine if the thesis is rejected or if an additional period of time may be granted for further modifications.

    f. Rejected. A rejected thesis may be re-submitted once only from at least six months after the date of submission of the report from the Examining Committee. Re-submission of a thesis shall follow the same procedure as an initial submission.

38. After the thesis has been defended and accepted, the candidate must submit the final version of the thesis to the Office of Research & Graduate Studies for deposit in the Library Learning Commons repository, the retention of the department concerned and the supervisor(s).

39. Advice concerning the preparation and presentation of theses is to be provided by the supervisor(s) and department(s) concerned.
40. It is the responsibility of a supervisor(s) to uphold and to transmit to students the highest professional standards of research and scholarship in the preparation of theses; to provide guidance in all phases of the student's research; to meet with their students regularly; to provide prompt feedback on submitted work, including drafts of the thesis; and to clarify expectations regarding collaborative work, authorship, publication and conference presentations which may result from the student's research.
41. Deferment for up to two years is possible provided a good reason to delay public access to a thesis is provided. Under exceptional circumstances, deferment can be renewed.

Code of Conduct

Bishop's University is committed to ensuring high-quality, effective supervision to support successful graduate education and research within an inclusive and positive scholarly environment. Consistent, high- quality supervision is essential for graduate students' progress, success, and wellbeing, and for advancing the University's research profile. Graduate students at Bishop's University are expected to comply with the Student Rights and Responsibilities (*www.ubishops.ca/about-bu/governance-and-administration/policies/student-rights-responsibilities/*), including the completion of required trainings (e.g., Prevention of Sexual Violence), in addition to the following guidelines specific to graduate studies.

For Graduate Students who are also employees of the University (e.g., employees taking courses on a part-time or full-time basis) this policy applies only to their academic activities as Graduate Students (e.g., all degree requirements including thesis/dissertation research).

1. **Mutual Respect:** Maintain a positive learning and research environment by treating one another – graduate student and supervisor(s) – with respect, exercising understanding in times of difficulty and extenuating circumstances, and support for the achievement of milestones.
2. **Open Communication**: Early and ongoing communication between graduate students and supervisors is essential to direct and re-direct graduate student work and respond to changes in planned activities.
3. **Goal-directed Learning and Progress Monitoring**: Discussing and establishing learning and research goals in relation to expectations for advanced research, monitoring goal progress, and mutually revising goals when necessary has been shown to accelerate and encourage graduate student progress.
4. **Responsive and Timely Feedback**: Be reasonably accessible to graduate students by providing descriptive, actionable, and timely feedback following program expectations. Inviting graduate students to respond to feedback is a fundamental academic skill that propels graduate student work forward. In turn, graduate students should be available to complete any commitment they may have with regards to supporting their supervisor's research.
5. **Leveraging Resources for Wellbeing and Success**: Leveraging university-wide resources can support both graduate students and supervisors in fulfilling their roles and responsibilities.

Academic Standing – Graduate Studies

Formal written notification from the Academic Standing and Admissions Policy Committee (ASAP) or the Admissions Manager is the only valid statement of a student's academic standing. Opinions expressed by or information provided by individuals are not binding unless confirmed in writing by the ASAP Committee or the Admissions Manager.

Inquiries related to matters concerning academic standing should be directed to the Admissions Office.

Academic Standing and Appeals: M.Ed. Educational Studies and Leadership and M.A. in Educational Studies

Maintenance of Good Academic Standing, Probation, and Must Withdraw Status

1. M.Ed./M.A. students who receive a grade lower than 70% in a course have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.
2. General Interest (SPG) students who receive a grade lower than 70% in a course have failed the course and are not permitted to continue to take courses without formal permission of the School of Education's Admissions Committee.

Academic Standing Appeals

Notwithstanding the University regulations on Academic Standing discussed below, the School of Education has its own regulations on Maintenance of Good Standing as indicated in points 1 and 2 above. Students who do not achieve that standard will not be eligible to continue in Education programs or as SPG students in Education at Bishop's University. Students have the right to appeal this decision to the Review Committee of the School of Education.

Academic Standing and Appeals: All other graduate programs

Maintenance of Good Academic Standing, Probation, and Must Withdraw Status

1. Full-time students who have attempted at least 12 credits must maintain a minimum cumulative average of 65%* calculated at the end of each semester in order to remain in good academic standing.
   **M.Ed./M.A. students who receive a grade lower than 70% have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.*
2. Part-time degree students who have attempted at least 9 credits must maintain a minimum cumulative average of 65%* calculated at the end of each semester in order to remain in good academic standing.
   **M.Ed./M.A. students who receive a grade lower than 70% have failed the*

course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.

3. General Interest (SPG) students must maintain a minimum cumulative average of 65%* calculated at the end of each semester in order to remain in good academic standing.
   **M.Ed./M.A. students who receive a grade lower than 70% have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.*

Students who do not achieve this standard are subject to the following regulations.

1. Full-time, part-time and SPU students failing to achieve a 60% average will be required to withdraw from the University for 12 months

   Note: A student may be required to withdraw without first being placed on probation if their academic performance requires it.
2. Students failing to achieve an average of 65% or higher, but who have an average above 60%, will be placed on academic probation.
   a. Full-time students:
      i. Will be required to raise their cumulative average to 65%* by the end of the next two semesters in which they are registered.
      ii. May not be registered in more than 15 credits per semester until their probation period has been completed.
      **M.Ed./M.A. students who receive a grade lower than 70% have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.*
   b. Part-time degree and SPU students:
      i. Will be required to raise their cumulative average to 65%* over the next 9 credits attempted.
      ii. May not register in more than 9 credits until probation has been removed.
      **M.Ed./M.A. students who receive a grade lower than 70% have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.*
3. Students on probation who fail to achieve the 65%* in the specified time period will be required to withdraw from the University for 12 months.
   **M.Ed./M.A. students who receive a grade lower than 70% have failed the course and are not permitted to continue in the program without formal permission of the School of Education's Admissions Committee.*
4. "Academic probation" and/or "must withdraw for academic reasons" will be recorded on the transcript of the students concerned.

Students who have been required to withdraw from the University for academic standing reasons are subject to the following regulations:

1. Students who have been required to withdraw from the University may not register for any course(s) at the University or complete courses elsewhere on a letter of permission for a minimum period of 12 months.
2. Students who have been required to withdraw may apply for re-admission to the University.
   a. Re-admission requests must be submitted according to the published application deadlines (see Applying to Bishop's University)
   b. Students should contact the Admissions Office for information on the re-admission application process.
   c. Students who are accepted back into the University will be re-admitted on academic probation.

Academic Standing Appeals

1. The above regulations are implemented by the Academic Deans and the Academic Standing Committee and administered by the Admissions Manager in collaboration with the Office of Research & Graduate Studies.
2. Decisions of the Academic Deans on academic probation, withdrawal from the University and subsequent readmission are binding.
3. A student may request the Academic Standing Committee to reconsider an unfavourable decision, but such a request does not necessarily constitute a basis for provisional readmission. Only one request for reconsideration of a Dean's decision will be heard by the Committee in each case.
4. Students wishing to request reconsideration should contact the Admissions Office for additional information on the process.
5. Appeal documentation must be submitted to the Committee by the date indicated on their written notice of academic standing.

Academic Standing and Appeals: General Information for all graduate programs

1. The cumulative average is calculated using all courses attempted at Bishop's, including those in which a grade of "0" is received, with the exception of extra degree credit, and extra degree credit ESL courses and courses from which students have withdrawn with permission. The courses are weighted according to their credit value.
2. Courses completed elsewhere are not included in the calculation of Bishop's University's cumulative average (see Credit for Studies Completed Elsewhere).
3. Should a student repeat a course at Bishop's in which a grade has already been received, the grade awarded in the second registration will be used in the calculation of the cumulative average and credits awarded, regardless of whether it is the higher or lower grade.
4. Students with a failing cumulative average (i.e. below 60%) will not be eligible to graduate from the University.
5. Students who have been asked to withdraw may not normally register for any course(s) at the University.
6. Applications for readmission must be submitted in writing to the Admissions Office. Students who are readmitted will be admitted on probation.
7. A full-time student on academic probation may not be registered in more than 9 credits per semester. A part-time student on academic probation may not register in more than 6 credits until probation has been removed.
8. "Academic probation" and "must withdraw for academic reasons" will be recorded on the transcript of the students concerned.

9. Formal written notification from the Academic Standing Committee or the Admissions Manager is the only valid statement of a student's academic standing. Opinions expressed by or information provided by individuals are not binding unless confirmed in writing by the Committee or the Admissions Manager.
10. In cases of alleged procedural errors, incorrect information or discrimination, an appeal may be made to the Student Appeals Committee.
11. Inquiries regarding any of the above should be addressed to the Admissions Office.

Admission Requirements

Master of Arts (M.A.) or Master of Science (M.Sc.) – Individualized Program

Thesis-based, Individualized Programs allow students to tailor a Master's program to a specific research goal and explore topics outside of traditional disciplines.

Admission requirements

The minimum requirements for admittance to a thesis-based, Individualized Program (M.A. / M.Sc.) include:

- a tenured or tenure-stream faculty member qualified in the intended field of study and willing to supervise the coursework and research component,
- an undergraduate degree with a major in a discipline related to their proposed research project; and,
- a minimum average of 75% or equivalent (3.0/4.0 or B-) in their undergraduate degree, and proof of English language proficiency.

With the department's approval, Adjunct Professors are allowed to serve as supervisors, provided that a tenured or tenure-track faculty member is also appointed as a co-supervisor.

Application Procedure

Before beginning the application process, interested students must find a faculty member willing to supervise their academic and research programs. Once a faculty member has agreed to develop and supervise the program, supporting documents must be gathered and submitted to the Office of Research & Graduate Studies.

The required supporting documents are as follows:

- Any official transcripts and university degrees earned,
- Individualized Program MSc/MA Research Proposal Form
- Letter(s) of recommendation from professors, other than the supervisor(s), who can evaluated and comment on intellectual capacity, ability to do research in the intended field, and chances of success in a graduate environment.
    - Current Bishop's University Students must provide one (1) letter of recommendation and applicants from other institutions must provide two (2) letters of recommendation.
    - Letters of recommendation must be emailed to admissions@ubishops.ca by the referee professor, along with the applicant's name.

Master of Education (M.Ed.) and Master of Arts in Education (M.A.)

The Master of Education (M.Ed.) in Educational Studies and Leadership OR to the Master of Arts in Educational Studies (M.A.) (thesis-based) are 45-credit programs that lead students in these programs to further their scholarly and professional development as administrators, educational leaders, educators, and researchers for work in educational institutions and in other organizational, professional, and community settings where enhancing learning for the social, cultural, digital, and economic needs of the 21st century are at the forefront. Students engage with the social, historical, cultural, and linguistic dimensions of education and consider issues of power, diversity, gender, and marginalization in education. These perspectives on education and leadership may be based on sociological, historical, or linguistic foundations; they may draw on a variety of contemporary frameworks including comparative and international education, post-colonial theory and theories of decolonization, applied linguistics, sociolinguistics, discourse analysis, and critical theory. Courses leading to these programs are offered year-round, on the Bishop's campus and possibly at off campus locations, via technology.

General Admission Requirements

Applicants to the M.Ed. in Educational Studies and Leadership or the M.A. in Educational Studies must:

- have completed a B.Ed. or related degree at a recognized university with an average of at least 75%;
- normally have at least two years of relevant educational experience (teaching or related professional experience);
- submit TOEFL, IELTS, or other equivalent English language proficiency test results with minimum scores of 80 (internet-based) for TOEFL with at least a score of 20 in each of the four components or 6.5 for IELTS with at least a score of 6.5 in each of the four components.

Required Supporting Documents

- 2 references using the School of Education Reference Form.
- Proof of English proficiency. All applicants must submit proof of English proficiency. Consult the English Language Proficiency Requirements document to determine what, if any, supplementary documents must be provided.
- Copy of most recent university transcript.
- Letter of intent outlining why you believe you are a good candidate for graduate studies at Bishop's University.
- Curriculum vitae
- M.A. applicants only: One-page description of your research interests, including area of interest.
- Copy of personal identification document(s). Consult the Personal Identification Documents page to determine what document(s) must be provided.

Master of Science in Computer Science (M.Sc.)

Bishop's offers a thesis-based as well as a course-based Master of Science (MSc). The course-based Master's offers a solid background for students aiming at a professional career. The academic focus of the thesis-based Master's is excellence in research and it aims to provide a starting point to students oriented toward PhD studies but also to professionally inclined candidates.

General Admission Requirements

- Completed undergraduate degree in a related field with high academic standing.
- Proof of English proficiency. All applicants must submit proof of English proficiency.

Thesis option

The minimum requirements for admittance to the Master's program are an undergraduate degree with a major in Computing Science or equivalent, and a high upper-second class standing.

Candidates with high academic standing in an undergraduate degree other than computer science, who have some computer science background either academic or professional, may be admitted as graduate preparatory students. Preparatory students will be asked to complete up to one year of undergraduate courses to enhance their background.

In addition to academic performance, a combination of factors is taken into consideration in assessing the eligibility of a candidate for admission into graduate programs. One important such factor is the availability of a faculty member competent and willing to supervise the academic program of studies and research of the candidate; a candidate will not be admitted to the program under any circumstance unless such a faculty member exists. Other factors include the performance of the candidate and the assessment provided by their referees as a measure of the likelihood that the candidate can successfully complete the course of studies and research.

Project Option

The minimum requirements for admittance to the program are an undergraduate degree with a major in Computing Science, Information Technology, Computer Engineering, Electrical Engineering, Mathematics, Physics, or equivalent, as well as a 70% standing.

Candidates with insufficient academic background in Computer Science may be admitted as graduate preparatory students and will be asked to complete up to one year of undergraduate courses to enhance their background.

Application procedure

The application procedure for our graduate degrees is the following two-step process:

1. Students must pre-apply by completely filling in the departmental form (no fee is required). Note that the form is different for the two options (course-based and thesis-based). If the form contains all the pertinent information, then the applicant will receive from the department a fairly accurate evaluation, which in most cases will indicate that the official application would be successful. Pre-applications are free of charge.
2. Once the applicant receives a positive evaluation from the department, the applicant must go to the Bishop's on-line application system and submit an official application (fees apply) in order to be granted official admission by the Admission Office.

Note that the two steps above can also be completed at the same time. However, in this case the application fees will be charged irrespective of the departmental decision.

Master of Science in Physics (Thesis-based)

The program is open to graduates of any university of recognized standing who have obtained at least a Bachelor's degree with honours with a Class II standing (GPA of 3/4 or its equivalent). An applicant who has followed a combined program (e.g., majors in math and physics), must have obtained at least a Class II standing in their physics courses. Applicants who do not satisfy these requirements may, with the permission of the University, be admitted to a qualifying year to bring their standing up to that of an honours degree. Alternatively, the department may require students to do additional courses to those that are considered mandatory to meet the minimum requirements. Even if M.Sc. applicants meet the minimum requirements, the department is not obligated to accept applicants based on the availability of supervisors, financial considerations, ability to offer the necessary courses, or the ranking of more qualified candidates.

Application procedure (Physics)

The application procedure the following two-step process:

1. Pre-apply by completely filling in the departmental form (no fee is required).
2. The formal part of the application process (a fee is required) can be initiated once the applicant has been contacted by the Chair of the physics department.

Note that the two steps above can also be completed at the same time. However, in this case the application fees will be charged irrespective of the departmental decision.

Micro-program in Climate Change

The basic entry requirement will be an undergraduate degree in any field from a recognized university with at least a B standing in the final two years of study. There are no specific pre-requisites, but students will need to be comfortable with basic mathematical and scientific concepts.

Application procedure

The application procedure is the following:

1. Visit the Bishop's University Online Application page and select the application form that applies to you. The letters of reference can be uploaded to the website or emailed directly to: admissions@ubishops.ca.
2. Complete the application form and upload a copy of all of the following:
   a. A statement of interest, no longer than 400 words in length, indicating why you want to be enrolled in the program and what you hope to gain from it

b. An official copy of all university transcripts

c. Two letters of reference. The letters of reference can be uploaded to the website or emailed directly to: admissions@ubishops.ca.

Graduate Certificate in Knowledge Mobilization

Individuals wishing to apply to this program must have an undergraduate degree in any field from a recognized university, with at least a B standing in the final two years of study. All prospective students must provide a statement of interest (maximum 500 words) explaining their objectives for taking this program and their plans for completing the practicum component. For students coming from non-English or French-speaking curriculums, a proof of proficiency in English in accordance with the general application procedures stipulated in the Academic Calendar will also be required. Students with knowledge of research methods applied regularly in Psychology, Sports Studies and Biology (Health) will be given priority.

Application procedure

The application procedure is the following:

1. Visit the Bishop's University Online Application page and select the application form that applies to you. The letters of reference can be uploaded to the website or emailed directly to: admissions@ubishops.ca.
2. Complete the application form and upload a copy of all of the following:
   a. A statement of interest, no longer than 500 words in length, explaining their objectives for taking this program and their plans for completing the practicum component
   b. An official copy of all university transcripts
   c. Two letters of reference. The letters of reference can be uploaded to the website or emailed directly to: admissions@ubishops.ca.

Graduate Certificates in Education

Graduate Certificates offered at Bishop's in the School of Education consist of 15 credits. The certificates are intended primarily for in-service teachers, administrators, educational leaders, and other school-based professionals. There are four certificates:

- Graduate Certificate in Inclusive Education: Teaching and Learning for All
- Graduate Certificate in Teaching and Learning in an Uncertain World
- Graduate Certificate in Culturally and Linguistically Responsive Teaching
- Graduate Certificate in Teaching Intensive English

Please note: These certificates may not be offered every year. They do not lead to teacher certification.

General Admission Requirements

Applicants to any of the Graduate Certificates in Education must:

- have at least two years of relevant experience (teaching or related professional experience); such experience will be taken into account as we consider admissions;
- submit TOEFL, IELTS, or other equivalent English language proficiency test results with minimum scores of 80 (internet-based) for TOEFL with at least a score of 20 in each of the four components or 6.5 for IELTS with at least a score of 6.5 in each of the four components.

Required Supporting Documents

- 1 letter of reference addressing academic ability, qualifications and experiences, and how this certificate will benefit your professional learning.
- Personal statement illustrating experience working with students and reason(s) for seeking admission to the program.
- Proof of English proficiency. All applicants must submit proof of English proficiency. Consult the English Language Proficiency Requirements document to determine what, if any, supplementary documents you must provide.
- Copy of most recent university transcript.
- Your curriculum vitae.

Application procedure (M.Ed., M.A., and Graduate Certificates in Education)

1. Visit the Bishop's University Online Application page and select the application form that applies to you. The letters of reference can be uploaded to the website or emailed directly to: admissions@ubishops.ca.
2. Complete the application form and upload a copy of all of the Required Supporting Documents based on the program you are applying for (see above for the complete lists).

Programs leading to the Master of Education (M.Ed.) in Educational Studies and Leadership and the Master of Arts (M.A.) in Educational Studies

Graduate courses leading to the M.Ed. and M.A. degrees are normally offered during each of the following four sessions: Fall, Winter, Spring 1, and Spring 2.

Course Offerings

In the M.Ed. and M.A. program, students pursue compulsory courses common to all students, in addition to some specific ones, depending on which program the student has opted for. Students who have completed graduate courses in Education at Bishop's University may be considered for advanced standing. The Admissions Committee of the School of Education may consider the transfer of credits from one of our existing certificate programs. Such transfer credits will only be considered for courses in which the grade received is at least 75%. Practicum courses are not eligible for such transfers. A maximum of nine credits from another institution may be applied to the M.Ed. and M.A. program. For more details on the Master's of Arts program, please refer to the M.A. Handbook.

Master of Education (M.Ed.) in Educational Studies and Leadership (45 credits) CONSTL

Research Module
6 compulsory credits

- GSE 510: Academic Reading and Writing
- GSE 516: Educational Research for Practice

Foundations courses
9 compulsory credits,

3 credits from:

- GSE 502: Educational Philosophies
- GSE 506: Globalization and Global Education
- GSE 540: Sociological Perspectives in Schooling

3 credits from:

- GSE 501: Psychology of Teaching and Learning
- GSE 523: Educational Neuroscience: Mind, Brain, and Teaching

3 credits from:

- GSE 503: Curriculum Explorations I
- GSE 574: Understanding Professional Development
- GSE 575: Educational Leadership Theories

Elective Courses
30 credits

More detailed information about specific course choices is available from the School of Education.

Master of Arts (M.A.) in Educational Studies (45 credits - thesis) CONLSL

Research Module
9 compulsory credits

- GSE 510 Academic Reading and Writing
- GSE 516 Educational Research for Practice
- GSE 518 Seminar in Research Methods

Foundations courses
6 compulsory credits, 3 credits each from 2 of the 3 following courses

- GSE 502 Educational Philosophies
- GSE 501 Psychology of Teaching and Learning
- GSE 503 Curriculum Explorations I

Elective Courses
6 credits

More detailed information about specific course choices is available from the School of Education.

Thesis documents

24 credits

- GSE 705: Thesis Proposal (3 credits)
- GSE 700: Thesis (21 credits)

List of Courses

GSE 500 Selected Topics in Curriculum 3-3-0
This course has been designed to provide the student with the opportunity to examine recent developments in curriculum.

GSE 501 Psychology of Teaching and Learning 3-3-0
This course will examine ways to use the theories and principles of psychology to understand learning and to inform teaching and curriculum processes. Students will compare and contrast the implications of different theories of learning, including how the theories define knowledge and learning. Students are encouraged to explore in depth topics relevant to their practice.

GSE 502 Educational Philosophies 3-3-0
This course will examine the philosophical principles and theories that provide a foundation for education today. Through a critical review of philosophical perspectives, students will develop an understanding of the way in which these perspectives continue to shape current educational thinking and practice.

GSE 503 Curriculum Explorations I 3-3-0
This introductory course will examine curriculum as a socially constructed process. Students in the course will examine the principles and theories relating the various dimensions of the curriculum process: designing, planning, enacting and reflecting.

GSE 504 Curriculum Explorations II 3-3-0
This course is an extension of GSE 503, Curriculum Explorations I. Students will focus on using the knowledge acquired in GSE 503 and new knowledge constructed in GSE 504 to generate a curriculum design and the resources necessary to enact that design.
Prerequisite: GSE 503

GSE 505 Evaluation and Assessment 3-3-0
This course will focus on the role of evaluation and assessment of the learning process and will include an examination of their underlying principles. The practical implications of the school context on the learning process will be explored.

GSE 506 Globalization and Global Education 3-3-0
This course provides an overview and introduction to areas of research that inform the practice of global citizenship education. These include inter-disciplinary studies in globalization and education, transnational studies, postcolonial theory, citizenship education, social justice education, migration studies, and sociological and pedagogical approaches to education for social diversity. Students will engage current debates and implications of these for practice.

GSE 507 Origins of Modern Schooling 3-3-0
This course examines the trends and themes in educational history that have influenced and shaped contemporary school systems. The course will explore how schooling and concepts of education have changed over time, and will critically analyze the successes and failures of educational developments. Students will engage in historical thinking and research in order to understand how the educational past continues to impact education today.

GSE 508 History of Education Policy 3-3-0
This course explores the historical processes that have created current Canadian school systems, with a particular emphasis on Quebec. Through an analysis of public policy case studies, the course will assess the unfolding educational policy environment and how policymaking ideas and debates have impacted the current education landscape.

GSE 510 Academic Reading and Writing 3-3-0
This course has been designed to facilitate students' ability to (1) read, synthesize and analyze academic articles, books and other primary source texts and (2) express their knowledge and ideas in a scholarly fashion using the conventions defined by academic journals. Different types of research articles will be examined and strategies for reading each type explored.

GSE 511 Educational Statistics 3-3-0
This course is an introduction to statistical analysis methods. Topics to be covered include means, standard deviations, variances, sampling distributions, hypothesis testing z-tests, t-tests, correlation/regression and, if time permits, Chi-squared tests. This course emphasizes a conceptual understanding of statistics and their application in educational research rather than mechanical calculation.

GSE 516 Educational Research for Practice 3-3-0
This course leads participants to consider the relationship between approaches to educational research, knowledge, and practice. Participants explore, in-depth, the epistemological positions and basic principles of action research and the importance of critical reflective practice for transformative education. Individual class projects are carried out, such that students in the M.Ed. Program will adopt an inquiry stance towards their practice, while students in the M.A. Program will deepen their understanding of the foundations of Educational Research.

GSE 518 Seminar in Research Methods 3-3-0
This compulsory course in research in education for M.A. students is designed to help participants to evaluate and conduct research in education. The course includes topics such as the selection of a research topic and generation of research question(s); collection, analysis and interpretation of qualitative and quantitative date; presentation and evaluation of research; and a range of research designs.
Prerequisite: GSE 516

GSE 520 Selected Topics in Special and Inclusive Education 3-3-0
This course has been designed to provide the student with the opportunity to examine recent developments in special education.

GSE 521 The Exceptional Learner 3-3-0
This course in special education will examine the characteristics of learners with diverse special needs, including the psychological, medical and sociological aspects of the various exceptionalities and the various ways in which they are educated. The content of this course will be of relevance to administrators and regular classroom teachers as well as to special General educators. Participants in this course will critically examine the many approaches to facilitating learning for individuals with learning disabilities and other exceptionalities.

GSE 522 Special Topics in the Psychology of Learning 3-3-0
This course provides students an opportunity to further explore topics related to the psychology of learning.
Prerequisite or Co-requisite: GSE 501

GSE 523 Educational Neuroscience: Mind, Brain, and Teaching 3-3-0
This course will provide students with an introduction to educational neuroscience framed from an interdisciplinary perspective. This course will review recent research from neuroscience, psychology, and education and will provide a balanced perspective about the potential and limits of linking these disciplines. Students will acquire the skills and concepts needed to interpret basic neuroscience research in the context of a meaningful interdisciplinary question. The course will also investigate the different histories, philosophies, and epistemological lenses through which common problems in neuroscience, psychology, and education are approached. Topics such as bilingualism, reading and language, numeracy and arithmetic, cognitive control, emotion, and creativity will be addressed.

GSE 527 Motivation and Teaching/Learning 3-3-0
This course will focus on motivational theories. It will include a rich analysis of how to create motivating learning environments and how to sustain student engagement. It may call on cognitive, constructivist, indigenous, and/or humanist approaches to motivation

GSE 530 Selected Topics in Media Literacy 3-3-0
This course has been designed to provide the student with the opportunity to examine recent developments in media literacy. It will foster an expanded understanding of media and media technology, including the impact on our society and the shaping of individual and collective values and beliefs.

GSE 534 Selected Topics in Educational Theory 3-3-0
This course is designed to provide the student with opportunities to explore various theories of education. Specific topics will be chosen for each course by the professor.

GSE 535 Policy Analysis for Educators 3-3-0
This course will offer educators the opportunity to analyze public policy and the various settings typically associated with education policy making. Readings will introduce students to education policy debates, including the theoretical and ethical, as well as the political and economic, challenges facing policy makers and those impacted by education policy. Students will be guided through critical analyses of education policy, with a particular emphasis on the policies and related laws guiding the Quebec school system. Students will be given opportunities to consider the ways in which practitioners engage with policy, and how they can play a role in the making and reform of that policy.

GSE 540 Sociological Perspectives in Schooling 3-3-0
This course examines the role of schooling in society based in a comprehensive review of research in the sociology of education. Student will develop a comparative framework to analyze the competing agendas underpinning educational policy, curriculum development and a range of pedagogical practice in order to identify the forces associated with the changing landscape of public education in the 21st century (with particular forces in the forces of globalization and the neoliberal restructuring of the public sector).

GSE 541 Colonialism, Education, and Decolonization 3-3-0
In this course, students will develop a comprehensive understanding of the ongoing history of settler colonialism in Canada and of imperialism and colonialism in the global context. This grounds an examination of the role of education in colonization and in the project of decolonization in a range of national contexts. This course responds directly to the calls for action issued in the 2015 final report of Canada's historic Truth and Reconciliation Commission on Indian Residential Schools and new curriculum on the history of IRS and treaty education subsequently introduced in every Canadian province.

GSE 550 Selected Topics in Educational Technology 3-3-0
This course has been designed to provide the student with the opportunity to examine recent developments in educational technology.

GSE 552 Technology in Education 3-3-0
This course will focus on the potential which technology offers for the enrichment of learning and teaching. Drawing on current research students will examine issues of appropriate effective integration of technology in the curriculum such as the need for value-added approaches. The course will focus on modern technologies including applications of e-learning.

GSE 553 Technology and the Role of the Educator 3-3-0
This course examines the role of the educator in an increasingly technological world. Modern advances in technology have seen a concomitant change in the role of the teacher from one who passes on knowledge to one who mentors students in developing their knowledge. Students become active in their educational activities. This course will examine theoretical perspectives on the role of the educator in a technologically-defined world and the implications for current and future practices. The students in this course will also learn how to create student-centered applications of technology in the classroom, allowing students to make their own products and their own content.

GSE 559 Research in Educational Technology 3-3-0
This course introduces students to the field of educational technology, an inter-disciplinarity field drawing on psychology, anthropology, communications, and systems analysis amongst others. Educational technology involves systemic and systematic perspectives of educational systems and processes. This is not a course about information technology. The course provides students with the opportunity to focus on an area of interest within the field. They will critically analyze the literature base related to one facet of educational technology and produce a scholarly, written review of that literature. This literature review will culminate in research questions, objectives, or hypotheses that align with the literature reviewed. Students will also write an action plan regarding an innovation based on the literature.

GSE 560 Selected Topics in Literacy 3-3-0
This course allows students to examine research related to current issues in literacy learning and teaching. Specific topics vary from year to year to take advantage of the special expertise of the faculty.

GSE 561 Language and Literacy Studies 3-3-0
Through this course, students examine current trends, issues, theory and research in teaching and learning in the English language arts classroom. Topics include media literacy, critical literacy, multiliteracies, multicultural curricula, and language learning and teaching across the curriculum.

GSE 564 Learning to Write and Writing to Learn 3-3-0
This course is designed for teachers who are interested in exploring many different approaches to learning to write in different genres. Participants should be prepared to engage in a great deal of writing as the philosophy of the course is one that is grounded in the notion that "we learn to write by writing".

GSE 570 Selected Topics in Educational Leadership and Administration 3-3-0
This course has been designed to provide the student with the opportunity to examine recent developments in educational leadership and issues related to educational administration.

GSE 571 Principles of Educational Leadership 3-3-0
This course, designed for teachers and administrators interested in becoming effective leaders, is an introduction to the study of educational leadership. Participants in this course will be introduced to the theory and research literature on issues of leadership in general and school leadership in particular. Students will explore topics such as school-based management, invitational leadership, flexible leadership, professional collaboration and individual initiative.

GSE 573 Creating and Leading Effective Schools 3-3-0
This course aims to inform practicing and aspiring school leaders about ways to mobilize a school staff toward greater effectiveness in reaching a joint mission. It examines current research and school improvement literature with a view to developing practical strategies for whole school assessment, evaluation and development.

GSE 574 Understanding Professional Development 3-3-0
This course will explore the many ways teachers develop as professionals, both individually and as members of educational organizations. Participants in the course will be involved in reading about and discussing topics such as the following: What knowledge is held by good teachers? What does teacher reflection contribute to development? What can be done by organizations to promote teacher learning and development? How are student learning and teacher learning related? What are the possibilities for designing professional development programs for teachers?

GSE 575 Educational Leadership Theories 3-3-0
This course is designed to provide students the opportunity to examine a set of educational leadership theories that have been or are currently used in school settings. Participants will be encouraged to critically examine the theories that are presented and explore the implication of using them in educational settings.

GSE 576 Teacher Leadership 3-3-0
Participants will explore the changing roles of teacher leaders and perspectives on teacher leadership. Participants will review relevant literature and will examine features of teacher leadership including teacher participation in institutional hierarchies and teacher involvement in shaping institutional cultures and acting as agents of transformation.

GSE 577 Family, School and Community Partnerships 3-3-0
This course is designed to facilitate the development of communication and leadership skills necessary for positive family, school and community interactions. Students will examine contemporary issues from both a theoretical and practical perspective and develop strategies which address a variety of complex situations.

GSE 578 Creating, Implementing and Evaluating Innovations in Education 3-3-0
This course will allow students to develop skills in drawing on the literature to create an innovation in education. They will create an action plan outlining the innovation and how to implement and evaluate it

GSE 580 Selected Topics in Second Language Learning 3-3-0
This course has been designed to provide the student with the opportunity to examine recent developments in second language learning.

GSE 581 Introduction to Linguistics for Language Teaching 3-3-0
This course is a survey of linguistic theory as it relates to second language teaching. Students are exposed to major themes in linguistics as a basis for the study of second language teaching and learning.

GSE 582 Language Acquisition 3-3-0
The purpose of this course is to examine ways in which theories of language acquisition have implications for the teaching and learning of a second language. The course includes a study of important research in the field of language acquisition and its relevance to second language teaching.

GSE 584 Teaching English Grammar 3-3-0
This course provides an overview of the theoretical background for the teaching of grammar. It includes a review of major grammatical patterns of English, as well as a focus on learner errors and the design of material appropriate to the teaching of grammatical concepts.

GSE 585 Methods in Second Language Teaching I 3-3-0
This first course in methodology introduces the student to classroom practices in teaching English as a second language. It includes a historical overview of approaches to second language teaching. The course focuses on the selection of teaching material and classroom techniques for second language teaching.

GSE 586 Methods in Second Language Teaching II 3-3-0
The second course in methodology extends the content covered in Methods I. Classroom practice and development of curriculum resources are the major topics covered in this course.
Prerequisite: GSE 585

GSE 587 Assessment and Evaluation in Second Language Teaching 3-3-0
This course includes an exploration of design strategies for effective assessment and evaluation procedures for second language teaching. It combines the theory of effective assessment with practical applications for the second language classroom.

GSE 588 The Second Language Learner 3-3-0
This course focuses on a learner-centered approach to second language teaching. It emphasizes the importance of individual learner backgrounds, special needs of learners, individual learning styles and strategies, and cultural considerations in the teaching of English as a Second Language.

GSE 589 Observation and Practice Teaching in Second Language Classrooms 6-3-0
This six-credit course involves the observation of experienced second language teachers in their classrooms, as well as peer observation of students in the course. Students will develop and teach lessons under supervision at both the primary and secondary levels. Students may observe and teach in adult classes.

GSE 590 The Creative Process in Education 3-3-0
Students will explore the creative process as it affects and is affected by the relationship between the teacher and the learner. Students will engage in creative projects and monitor their own creative process. Through readings, discussion, and experiences with different media, students will learn to articulate and evaluate learning within a creative process framework.

GSE 599 Transformative Praxis 3-3-0
The intent of this course is to cultivate Action Research based experiences with a specific focus on social justice grounded themes and collaborative interaction with communities. Students are expected to work in tandem with and under the supervision of one or more faculty members who are actively engaged in such work. By spending time in the field, it is anticipated that students and community members will creatively expand their own borders of transformative possibilities through the art of praxis.

GSE 630 Independent Study in Education 3-0-0
Students in an existing graduate program may be granted permission to pursue an independent study project under the guidance of a faculty supervisor on a topic in Education significant to their program. Topics must be approved by the Graduate Program Committee of the School of Education.
Pre-requisite: Permission of the Graduate Program Committee

GSE 700 Thesis 21 credits
Under the supervision of the School of Education thesis supervisor, the M.A. student conducts a research study, which is followed by completion of an academic document that must meet the standards of scholarship established by the appropriate research community.
Prerequisite: Successful completion of GSE 705: Thesis Proposal

GSE 701F Monograph 6 credits
This 6-credit monograph, under the supervision of a mentor assigned by the School of Education, permits the student in the final stages of his/her program to use the knowledge acquired to inform the designing and composing of an original piece of scholarly writing. This document can take a variety of forms including a research report, a book, or a critical review of a body of literature. A successful graduate level monograph is an academic document that must meet the standards of scholarship established by the appropriate research community.
Prerequisite: Completion of all course requirements for the Master of Education degree.

GSE 705 Thesis Proposal 3-3-0
This 3-credit independent study, done under the supervision of a thesis supervisor, leads to completion of a proposal, which is defended by the M.A. student prior to registration in the thesis. In addition to developing the proposal, the student deepens understanding of research ethics and policies. Where pertinent to the proposed study, the student prepares ethics submissions.
Prerequisite: Completion of course requirements for the Master of Arts in Educational Studies

GEA 522 The Principal 3-3-0
This course will examine the relationship of the school principal with various constituencies, including students, teachers, the larger educational community and parents. Expectations and skills related to the roles and responsibilities of the school principal will be explored.

GSL 582 Building Oral Competencies 3-3-0
This course provides students with an overview of theory related to the teaching of adults. It focuses on the application of this theory to the teaching of English as a second language to adults: the development of a needs analysis, selection and design of appropriate materials, and the involvement of adult learners in the learning process.

GSL 589F Individual Project in the Teaching of English 3-3-0
This course may be taken with the special permission of the School of Education. It provides an opportunity for a student to pursue an area of special interest in the field of second language teaching.

Graduate Certificates

Graduate Certificates offered at Bishop's in the School of Education consist of 15 credits. The certificates are intended primarily for in-service teachers, administrators, educational leaders, and other school-based professionals. The Graduate Certificate in Teaching and Learning in an Uncertain World is designed to meet the needs of educational professionals in the K-12, post-secondary, and private sectors.

The Graduate Certificate in Inclusive Education and the Graduate Certificate in Teaching and Learning in an Uncertain World are offered following a cohort model. Students will take two intensive, on-site or online summer courses in their initial session, and a further three courses online -- one in fall, one in winter, and one in spring.

Graduate Certificate in Inclusive Education: Teaching and Learning for All CONIED

This program is intended for in-service teachers, administrators, and other school-based professionals who would like to be better equipped to support students in an inclusive setting. The certificate provides participants with opportunities to review and extend their knowledge of teaching, learning, assessment, and policy in Inclusive Education, while engaging with other practitioners in similar roles. Students enrolled in this certificate will be have the opportunity to reflect on their own practice, and to critically engage with current themes, theories, and research in the field of Inclusive Education. The graduate certificate will use a cohort model. Students will take two intensive, on-site or online summer courses in their initial session, and a further three courses online -- one in fall, one in winter, and one in spring. The initial intensive session is intended to help develop community within the cohort.

Please note: This certificate may not be offered every year. This certificate does not lead to teacher certification.

Students will earn 15 credits by taking 5 of the 6 courses below:

GCI 524	Exceptional Learners in Inclusive Classrooms
GCI 525	School-based Mental Health Practice
GCI 526	Leading for Inclusion
GCI 527	Differentiating Instruction and Assessment
GCI 528	Special and Inclusive Education: History of Policy and Practice
GCI 529	Inclusive Education: Syntheses and Culminating Explorations

GCI 524 Exceptional Learners in Inclusive Classrooms 3-3-0
This course focuses on the teaching of students with exceptionalities in inclusive settings in the school community. It will provide students with the opportunity to examine the characteristics of diverse learners, including the psychological, medical and sociological aspects of various exceptionalities, and to consider how this knowledge best informs educational practice. Participants in this course will also critically examine approaches to facilitating learning for individuals with learning differences and other exceptionalities, such as Universal Design for Learning (UDL), and differentiated instruction (DI). Finally, students will consider collaboration with students, families, and other school personnel in the instructional process.

GCI 525 School-based Mental Health Practice 3-3-0
This course focuses on school-based mental health practice. Students will develop an understanding of the prevalence and range of mental health concerns that may be present in children and adolescents. They will analyze the educational impact of mental health issues on youth. They will examine various approaches to support students within the home, school and community. Students will explore a range of topics such as the benefits of authentic home/school collaboration, building children's resiliency, looking at behaviour through a self-regulation lens, and the role of connected relationships with caring educators.

GCI 526 Leading for Inclusion 3-3-0
This course explores student diversity within the context of inclusive education. Current theoretical and conceptual frameworks related to holistic learning, equity integration and a capacity-approach to diverse student learning will be examined. Attention will be given to critique the dominant views of equity and inclusion and how current schooling policies and practices are informed and constructed as a result. Students will reflect upon their agency and roles as leaders to envision and reconstruct more inclusive, student-centered, learning environments.

GCI 527 Differentiating Instruction and Assessment 3-3-0
This course will focus on various ways to differentiate instruction and assessment. Drawing on research- based best practices, specific cases highlighting different approaches will be used as a basis for investigation. Teachers and administrators will engage in an inquiry-based approach drawing on research to develop their own 'cases' showcasing plans to differentiate instruction and assessment.

GCI 528 Special and Inclusive Education: History of Policy and Practice 3-3-0
This course examines the origins of special education and the historical development of education policy and law related to students with disabilities. The course will consider historical shifts in the theory and practice of identifying students with special needs, as well as educational debates concerning the type and quality of education that such students ought to receive. The movement for integration and inclusion will be explored through an analysis of major court rulings, legislation, and the growth of school policies related to equality, equity, and diversity.

GCI 529 Inclusive Education: Syntheses and Culminating Explorations 3-3-0
Students in the graduate certificate will have the opportunity to bring learning together through a capstone project related to certificate themes and their own teaching and learning contexts. The capstone course consists largely of independent work undertaken alongside regular check-ins, guidance, and supervision from the course instructor. Capstone projects will be open in terms of focus and format,but are expected to represent a synthesis and/or application of developing understandings.

Graduate Certificate in Teaching and Learning in an Uncertain World CONTLW

This graduate certificate program will bring together teachers, educational leaders, and other educational professionals in the K-12, post-secondary, and private sectors to consider teaching and learning in an increasingly uncertain world. Through a focus on radical hope (Lear, 2008; Smits & Naqvi, 2015), students will consider how taking educational action in the present might lead to improved outcomes in the future. The program as a whole will explore multiple and interdisciplinary lenses for considering the issues under study. There will also be a strong emphasis on curriculum as a tool for change. The graduate certificate will use a cohort model. Students will take two intensive, on-site or online summer courses in their initial session, and a further three courses online -- one in fall, one in winter, and one in spring. The initial intensive session is intended to help develop community within the cohort. Ideally it would occur face-to-face in order to engage in teaching alongside land.

Please note: This certificate may not be offered every year. This certificate does not lead to teacher certification.

Students will earn 15 credits by taking 5 of the 8 courses below:

GCU 542	Radical hope: Teaching and learning in the context of human-driven climate change
GCU 543	Reconceptualization of curriculum: Curriculum as a process in precarious times
GCU 544	Respect, relevance, reciprocity, and responsibility: Teaching and learning in good relation
GCU 545	Getting dirty: Experiential teaching and learning within and beyond the classroom
GCU 546	Protest as curriculum: Curriculum as protest
GCU 547	Navigating the uncertainty of living and learning online
GCU 548	Leading in an uncertain world: Considering the meanings of transformation in education
GCU 549	Teaching and learning in an uncertain world: Syntheses and culminating explorations

GCU 542 Radical hope: Teaching and learning in the context of human-driven climate change 3-3-0
This course will take an interdisciplinary approach to considering the human-driven climate change and what it means in terms of teaching and learning. It will present narratives from literature, science, education, anthropology, geography, the media, Indigenous studies, philosophy, and policy to consider how climate change is framed, what it implies for education, and how teachers and students might learn together hopefully in the face of how climate change is profoundly impacting global processes.

GCU 543 Reconceptualization of curriculum: Curriculum as a process in precarious times 3-3-0
This course invites students to consider the meaning of curriculum for a world in crisis, and for leading and educating in uncertain times. Drawing on theorists who conceive of curriculum as process, rather than jurisdictionally-mandated content and prescribed outcomes, the course looks at curriculum and education as a responsive and dynamic social and cultural relationship. Within the course, the integration of natural, social, political and economic dimensions serves as a means for course participants to pose problems and design inquiries that they see as significant to themselves and relevant in school-setting - for youth who are facing an uncertain world and future.

GCU 544 Respect, relevance, reciprocity, and responsibility: Teaching and learning in good relation 3-3-0
This course examines the current context for Indigenous-settler relations in education in Canada. In particular it considers how Indigenous peoples have positioned education as a platform for resistance, resurgence, and the potential development of good relations. The course will explore key documents for framing such relations – Indian Control of Indian Education, the Royal Commission on Aboriginal Peoples, the Final Report of the Truth and Reconciliation Commission – in order to critically consider responses in place, curricular opportunities, and teachers' obligations.

GCU 545 Getting dirty: Experiential teaching and learning within and beyond the classroom 3-3-0
This course will focus on gardening, outdoor learning, and experiences in/with the natural world as a means of cultivating relationships with place and land for both teachers and students. There will be a significant hands-on component to the course in order to break down the fear of getting dirty and perceived risks of moving outside the confines of a classroom or school space. The course will work towards development of systems thinking where teachers and learners see themselves as a part of a relational world rather than in control of an objectified existence.

GCU 546 Protest as curriculum: Curriculum as protest 3-3-0
This course will examine the deep connections between social and ecological justice through protest and land protection movements. It will consider historical origins of protest, the goals and impacts of protest, and motivations for protest. The course focus will be protest and land protection movements led by young people and members of communities that are marginalized, undertaken in support of the planet and all its inhabitants. It will position such movements as opportunities for learning, and take a particular interest in public curricula emerging from the movements to consider how such curricula can inform teaching and learning in schools.

GCU 547 Navigating the uncertainty of living and learning online 3-3-0
Online technologies have influenced how we live and how we learn. This course will explore the relationships between online communication technologies and our communities, our relationships, and our learning. It will explore challenges associated with the use of online communication technologies including cyber-bullying and the role of educational leaders in addressing these issues. It will consider transformational possibilities for life-long learning and community building, examining specific cases in multiple contexts including schools. It will also explore ways technologies can support us navigating uncertain times.

GCU 548 Leading in an uncertain world: Considering the meanings of transformation in education 3-3-0
Through this course students will learn about and critically analyze frameworks for transformational work in educational settings. Taking into account increasing uncertainty, ambiguity and complexity in the world, the course takes up a variety of disciplinary and inter-disciplinary lenses such as educational leadership and systems thinking. The course develops competencies related to leading and engaging in transformational change processes in the context of global uncertainties.

GCU 549 Teaching and learning in an uncertain world: Syntheses and culminating explorations 3-3-0
Students in the graduate certificate will have the opportunity to bring learning together through a capstone project related to certificate themes and their own teaching and learning contexts. The capstone course consists largely of independent work undertaken alongside regular check-ins, guidance, and supervision from the course instructor. Capstone projects will be open in terms of focus and format, but are expected to represent a synthesis and/or application of developing understandings.

Graduate Certificate in Culturally and Linguistically Responsive Teaching CONCLT

The certificate aims to prepare in-service teachers and/or educational personnel who teach and work with linguistically and culturally diverse students in local and international contexts. The program equips participants with the essential knowledge in linguistics, second language acquisition as well as teaching and learning approaches that are linguistically and culturally responsive to the needs of additional language learners in different contexts. The program also highlights a critical understanding of bi/plurilingual learner characteristics and how their complete communicative repertoires in first and additional languages as well as their diverse cultural resources can be leveraged for meaningful language and content learning and intercultural communication.

Please note: This certificate may not be offered every year. This certificate does not lead to teacher certification.

Students will earn 15 credits shown below:

GSE 581	Introduction to Linguistics for Language Teaching
GSE 582	Language Acquisition
GSE 588	The Second Language Learner
GCL 597	Plurilingualism and Intercultural Education
GCL 598	Methods in Plurilingual Integrated Teaching and Learning

GSE 581 Introduction to Linguistics for Language Teaching 3-3-0
This course is a survey of linguistic theory as it relates to second language teaching. Students are exposed to major themes in linguistics as a basis for the study of second language teaching and learning.

GSE 582 Language Acquisition 3-3-0
The purpose of this course is to examine ways in which theories of language acquisition have implications for the teaching and learning of a second language. The course includes a study of important research in the field of language acquisition and its relevance to second language teaching.

GSE 588 The Second Language Learner 3-3-0
This course focuses on a learner-centered approach to second language teaching. It emphasizes the importance of individual learner backgrounds, special needs of learners, individual learning styles and strategies, and cultural considerations in the teaching of English as a Second Language.

GCL 597 Plurilingualism and Intercultural Education 3-3-0
This course explores recent changes in language theory, viewing individuals' language competencies as complex, dynamic and holistic repertories of communicative resources that language learners/users employ to construct meaning and engage in intercultural communication.
Implications for teaching and learning will be examined and discussed, focusing particularly on how plurilingual pedagogies can facilitate metalinguistic awareness, cross-language connections as well as critical intercultural awareness.

GCL 598 Methods in Plurilingual Integrated Teaching and Learning 3-3-0
This methods course introduces the participants to teaching approaches that support diverse students' use and development of plural repertoire of linguistic and cultural resources to meet communication needs in academic and/or professional contexts. It includes a specific focus on curricular design, development of curricular materials, as well as teaching and learning practices that foster the development and use of transversal language and literacy skills and strategies to promote effective knowledge construction and communicative performance.

Graduate Certificate in Teaching Intensive English CONGSL

The Teaching Intensive English as a Second Language Concentration is intended for in-service ESL teachers who would like to be better equipped for intensive ESL (IESL) teaching positions. The program provides teachers with opportunities to review and extend their knowledge of language teaching pedagogy while studying in an English-environment.

Please note: This program is not offered every year.

Students will gain 15 credits through the courses below:

GSL 540	Intensive English: New Trends and Theories
GSL 541	Teaching and Learning in Intensive English
GSL 544	Course and Curriculum Design in Intensive English
GSL 547	Language Learning through Cultures
GSL 549	Building Oral Competencies

GSL 540 Intensive English: New Trends and Theories 3-3-0
This course addresses issues related to second language learning and acquisition, particularly those that relate to intensive English. Topics addressed include language learning theories, such as cognitive and sociocultural perspectives; theories of bilingualism and multilingualism; new literacies - multiliteracies, critical literacy; discussion and debate about Intensive English in society; and various models of Intensive English.

GSL 541 Teaching and Learning in Intensive English 3-3-0
This course discusses both new and familiar learning theories and pedagogy in the context of the Intensive English program. Participants will explore learner-responsive teaching through examining individual differences & multiple intelligences, differentiated instruction, and cooperative learning. They will also look at the ways In which various technologies can contribute to intensive English pedagogy and computer-assisted language learning (CALL)

GSL 544 Course and Curriculum Design in Intensive English 3-3-0
Participants will examine aspects of course and curriculum design that are relevant to teachers of intensive English. They will learn about and apply Interdisciplinary design, backward design, and universal design. They will discuss content-based, task-based, and project-based approaches to language teaching and pedagogical issues related to the teaching of linguistic forms in meaning-focused instruction. The challenges and benefits of making connections with other subject areas and collaborating with other colleagues will be discussed.

GSL 547 Language Learning through Cultures 3-3-0
This course will explore the language arts approach to the teaching of ESL. Theories regarding the connection between English-language cultures and language learning will be introduced, and students will be involved in the construction of classroom learning situations based on different cultural forms (e.g., (poetry, short stories, films, songs and other media) to promote language learning and a critical appreciation of the English-language cultures.

GSL 549 Building Oral Competencies 3-3-0
This course will address issues related to the development of listening and speaking skills in second language learners, including those related to pronunciation. In addition, it will focus on varieties of oral communication in different contexts and the different levels and ages of learners.

Graduate Micro-Program in Climate Change

Faculty

Matthew Peros,
B.Sc. (Toronto), M.Sc. (York), Ph.D. (Toronto); Professor and *Director of the Graduate Micro-Program in Climate Change*

Elisabeth Levac,
B.Sc., M.Sc. (UQAM), Ph.D. (Dalhousie); Professor

Alexandre Langlois,
B.Sc. (Université de Sherbrooke), M.Sc. (Université de Sherbrooke), Ph.D. (University of Manitoba); Professor

Darren Bardati,
B.A. (Bishop's), M.A., Ph.D. (McGill); Professor

Program Overview (9 Credits) CONECC

Finding solutions to the problems brought on by climate change requires educating a new generation of global citizens well-versed in the concepts, issues, and challenges associated with such a complex topic. Bishop's University has responded to this need by developing a largely online graduate-level Micro-Program in Climate Change. The program offers instruction from leading experts on the science of climate change, its impacts, and strategies for its mitigation. At the end of the program, it is expected that students will be able to:

- Take a position and provide evidence to support arguments concerning major issues in climate change science
- Develop an understanding of the causes and effects of climate change on local, regional, and international scales, in major regions of the world (poles, tropics)
- Articulate a range of plausible solution strategies to confront climate change in terms of adaptation and mitigation

Graduates of the Micro-Program will be well positioned to compete for jobs in both government and the private sector. Moreover, the Micro-Program could be used as a springboard for further study, whether it involves graduate school in a climate or environment-related field, or a professional degree such as law school or an MBA. Indeed, the Micro-Program has been designed so that it will provide students with a solid understanding of both the scientific and non-scientific aspects of climate change and thus will be highly applicable to a range of career options.

Admission Requirements

The basic entry requirement will be an undergraduate degree in any field from a recognized university with at least a B standing in the final two years of study. There are no specific pre-requisites, but students will need to be comfortable with basic mathematical and scientific concepts. It is not possible to enroll in the Micro-Program before the completion of all undergraduate degree requirements.

List of Courses

To complete the Micro-Program, students will do three three-credit masters-level courses (for a total of nine credits) from a list of potential courses:

ESG 502 Sustainable Agriculture and Climate Change 3-3-0
The purpose of this course is to examine the nexus of agriculture and climate change. What are the impacts that climate change is having on agriculture, and what are the impacts that agriculture is having on climate change? We will examine climate change projections, changing agricultural practices, and their impact on food security. We will also learn agriculture's role in reducing greenhouse gas emissions, and discuss how agroecological and regenerative approaches to agriculture might build resilient systems, and help people adapt to climatic changes. The course will include guest lectures from prominent academics working in this field.

ESG 526 Environmental Impacts of Climate Change and Human Activities on the Oceans 3-3-0
People living in cities remote from the sea often forget about the role of the oceans in their economy and in the climate system. The course will examine society's relationship with the oceans, especially in coastal zones. Oceans are the site of many important human activities, and thus are sensitive to pollution and modifications brought by climate change. The goal of the course is to increase students' awareness of the major environmental issues presently affecting the oceans and the challenges facing decision makers when dealing with the impacts of climate change on the oceans (e.g., sea level rise, saltwater intrusions into aquifers, fisheries, etc.).

ESG 550 Global Climate Justice 3-3-0
Grounding our conversation in social science, environmental ethics, and movement & community-based knowledge, we will work to understand the problems associated with mounting climate injustices globally and to learn about the transformative visions, mobilizations, and solutions offered by the communities and movements fighting for climate justice in different continents and regions of the world.

ESG 561 Arctic and Antarctic Environmental Change 3-3-0
The polar environments, especially the Arctic, are undoing change at a rate far faster than most other regions. Change at the poles has happened in the past and will continue to have important consequences for all Earth's systems. This course will examine the development of these extreme environments and examine what can be expected for the future.

ESG 570 Special Topics in Climate and Environmental Change 3-3-0
A graduate-level lecture/seminar course offered by regular and visiting faculty on topics related to their research interests in climate and environmental change. Topics are determined by the instructor therefore content of the course varies year by year. The course will be offered on an occasional basis.

ESG 573 Energy and the Environment 3-3-0
This course introduces the concepts of energy and power and their units and reviews energy sources, fossil fuels, their environmental impacts, and resource consumption. The basics of heat transfer, energy conversion, and its efficiency according to thermodynamics are covered (including the concepts of temperature, specific and latent heat, the first and second law of thermodynamics, heat engines, and thermal systems). Other topics discussed include electromagnetic and blackbody radiation, the greenhouse effect, the Earth's energy balance, the basics of electromagnetism, and electric power. Radioactivity, nuclear energy, and renewable energy sources are introduced.

ESG 575 Tropical Environments and Climate Change 3-3-0
This course attempts to provide an overview of the tropics as a unique environment and one that poses special problems to its human occupants. The working assumption in the course is that the tropics comprise a far too complex and heterogeneous environment for simple generalizations to apply. However, by gaining some understanding of how its component systems work, one can be in a better position to identify the appropriate questions to be asked and experiments to be performed, so that site-specific solutions can be developed for management problems in different parts of the tropical world. The course will provide a review of tropical climatology, soils, and biomes, in addition to discussing more applied issues such as forestry and agriculture.

ESG 577 The Health Impacts of Climate Change 3-3-0
Climate change is expected to affect human health in numerous ways. The most obvious health impacts are those associated with thermal stress and extreme weather events such as floods and hurricanes (premature deaths, infectious diseases; diarrhoeal disease). Global warming will also be associated with a spread of vector-borne diseases (such as malaria, dengue fever, yellow fever, Lyme disease, etc.) and increases in seasonal allergies. The course will examine the overall impact of environmental degradation, displacement and loss of livelihood on the general physical and mental health of populations.

Courses will be offered in the winter semester of each year. Students may take all three courses in one semester, or take courses over a period of several years. The courses will consist of a combination of seminar, lecture, fieldtrip, and laboratory instruction.

Graduate Certificate in Knowledge Mobilization

Program Overview (15 credits) CONKMB

Knowledge Mobilization (KMb) is the process by which we share and uptake information for the benefit of society. The goal of this Graduate Certificate is to develop students' knowledge, skills and values with respect to KMb and build the capacity to select and apply KMb tools and techniques in research and/or applied contexts. The basic entry requirement will be an undergraduate degree in any field from a recognized university with at least a B standing in the final two years of study. There are no specific pre-requisites, though it is highly recommended that students have some background in research methods and scientific concepts. Students in this program will complete 4 courses (15 credits), including a 6-week practicum.

KMB511 Theories of Knowledge Mobilization in Research Settings 3-3-0
This course is an overview of the theories and practices involved in the creation, synthesis, translation and dissemination of knowledge in science and social science research contexts, including areas of knowledge translation and implementation science. We will discuss various contexts in which knowledge is created, ethical and equity principals of what research "should" be mobilized, integrating knowledge mobilization into research design, and how to identify barriers and facilitators researchers face using and sharing knowledge. Across various disciplines, we will identify current tools and techniques to evaluate the success of KMb initiatives. Students in this class will create their own KMb plan for a program of research and will design an evaluation of their KMb project.

KMB515 Theories of Knowledge Mobilization in Applied Settings 3-3-0
This course is an overview of how applied settings such as health, social services, and non-profit sectors, can engage with research at the level of practice, program development, and policy. We will also discuss how these sectors can inform research creation. We will discuss various contexts in which research could/should be applied and weighed in decision making, how to identify audiences for specific areas of knowledge, and how to identify barriers and facilitators to brokers or people in the field. We will discuss how researchers can building partnerships with consumers of their research. Across various sectors, we will identify current tools and techniques to evaluate the success of KMb initiatives. Students in this class will create their own KMb package to inform or raise awareness, and will design an evaluation of their KMb project.

BIO 520 / KMB 520 Science Communication 3-3-0
This course will focus on skill development, writing and communication strategies for online and print media, such as online biogs, and columns in local newspapers, as well as current innovations in communication such as infographics. Students will hone their skills in writing techniques, particularly in communicating complex scientific material to a broader audience.

KMB 530 Knowledge Mobilization Practicum 6-6-0
The practicum will explore the application of knowledge gained from the theoretical courses taken in the first half of the Certificate. Students would be placed in a local organization with a mandate to translate knowledge into action. Examples of projects that could be conducted during a practicum include establishing a KMb strategy for an organization, creating KMb materials that would meet the organization's needs, researching and writing a column in a local newspaper, developing a workshop, or participating in a KMb internship at Bishop's University's Research Office. At the end of the practicum, students would submit a portfolio that would include the KMb projects that they have led and/or supported over its duration, a preliminary evaluation of these projects, as well as a journal outlining how previous study of KMb theories and of science communication informed their practicum experience.
Prerequisites: KMB 520

Master's Degree in Computer Science

Master's Degree Program (45 credits)

I. Thesis-Based Program CONCSC

Entrance Requirements
The minimum requirements for admittance to the Master's program are an undergraduate degree with a major in Computing Science or equivalent, and a high upper-second class standing.

Candidates with high graduate academic standing in an undergraduate degree other than computer science, who have some computer science background either graduate academic or professional, may be admitted as graduate preparatory students. Preparatory students will be asked to complete up to one year of undergraduate courses to enhance their background. We may at our discretion replace the requirement of preparatory period with a set of preparatory co-requisites. These co-requisites will consist of undergraduate courses to be taken concurrently with the regular graduate courses. In these circumstances the candidate is admitted directly to the graduate program, but should expect a longer residency in the program.

In addition to graduate academic performance, a combination of factors is taken into consideration in assessing the eligibility of a candidate for admission into graduate programs. One important such a factor is the availability of a faculty member competent and

willing to supervise the graduate academic program of studies and research of the candidate; a candidate will not be admitted to the program under any circumstance unless such a faculty member exists.

Other factors graduate the performance of the candidate and the assessment provided by his/her referees as a measure of the likelihood that the candidate can graduate complete the course of studies and research.

Program Requirements

45 CS credits:

15 credits: five 500-level CS courses
6 credits: Graduate Seminar courses (CS 597 and CS 598)
24 credits: Master's Thesis CS 599

Graduate students should familiarize themselves with the University and divisional calendar and regulations. Some of the information herein is adapted from these regulations, but is not intended as a replacement.

Completing the degree normally requires five one-term 500-level courses, registration and participation in the Graduate Seminar courses (CS 597 and CS 598), together with a Master's thesis (CS 599). Courses are chosen by students in consultation with their supervisor. All courses prescribed for a student's approved program of study are designated as primary. Courses additional to the student's approved program are designated as secondary. Failure to attain a minimum of 65% in any of the primary courses may result in the student being required to withdraw from the program.

Under certain circumstances, it is permissible for a student admitted to the program to follow an approved graduate-level credit course at another university. All interested students should consult their supervisor and the chair of their department prior to registration in order to obtain further information on procedures and conditions of eligibility.

A thesis proposal is expected by the end of the third term in the program. Such a proposal is a requirement in CS 597 and so students should plan to register in this course accordingly (and in consultation with their supervisor). A progress report (CS 598) is expected in the term following the proposal and should be provided no later than two terms after the proposal. Failure to register in CS 597 or CS 598 in time as well as a Fail grade in either of these two courses may result in the student being required to withdraw from the program.

Thesis topics are chosen after discussion with potential supervisors. The amount of flexibility allowed in pursuing a particular topic will vary according to the supervisor's needs and interests. Theses are defended before an examining committee consisting of two examiners and one chair. The chair of the examining committee does not have to submit an evaluation of the thesis, but can do so if she/he so wishes. In the event of a difference in opinion between examiners on whether the thesis is acceptable the chair shall have the tie-breaking vote. The supervisor(s) of a candidate cannot be a voting member of that candidate's examining committee, but is expected to participate in the committee's deliberations.

Any candidate (full-time or part-time), after initial registration in a thesis must maintain this registration in all successive terms (including the term in which the student is examined) until his/her thesis is completed, with the exception of possible temporary leaves of absence dully approved by their supervisor as specified in the general regulations for graduate studies in science. Completion means submission of a final grade to the Faculty after modifications, any retyping involved, etc. Students should note that faculty approval to register in the thesis is given on the understanding that the student will be in regular contact with his/her supervisor, and that thesis research will be actively pursued in each term of registration.

Stream change

Students in the Project stream can switch to the Thesis stream only with permission from the department. In addition, they must meet the following conditions: (a) they have taken and passed at least four graduate courses at Bishop's, (b) they have an average grade of 90 or better in the graduate courses taken at Bishop's, and (c) at least one faculty expresses interest in supervising their research toward the Master's thesis. No more than five graduate courses can be counted toward the requirements of the new program..

Course-Based Program CONCSP

Entrance Requirements

The minimum requirements for admittance to the Master's program are an undergraduate degree (minimum of a 70%) with a major in any of the following disciplines: Computing Science, Information Technology, Computer Engineering, Electrical Engineering, Mathematics or Physics. Note however that the admission process is competitive and so meeting the minimum requirements does not guarantee admission.

Candidates with insufficient academic background in Computer Science may be admitted as graduate preparatory students. Preparatory students will be asked to complete up to one year of undergraduate courses to enhance their background. We may at our discretion replace the requirement of preparatory period with a set of preparatory co-requisites. These co-requisites will consist of undergraduate courses to be taken concurrently with the regular graduate courses. In these circumstances the candidate is admitted directly to the graduate program, but should expect a longer residency in the program.

Program Requirements

45 CS credits:

36 credits: twelve 500-level CS courses
9 credits: CS 590 (Master's Project)

CS Graduate students should familiarize themselves with the University and divisional calendar and regulations. Some of the information herein is adapted from these regulations, but is not intended as a replacement.

Completing the degree normally requires twelve one-term 500-level courses, together with a Master's project (CS 590).

The twelve one-term courses (36 credits) must be chosen subject to the following restrictions: a minimum of three courses (9 credits) must come from the Data Science block, a minimum of three courses (9 credits) must be taken from the Systems and Applications block, and a minimum of one course (3 credits) must come from the Theory block. The blocks are defined as follows:

1. Data Science (at least 9 credits): CS 503, CS 504, CS 505, CS 507, CS 509, CS 550, CS 566.

2. Systems and Applications (at least 9 credits): CS 501, CS 512, CS 516, CS 520, CS 526, CS 556, CS 557, CS 560, CS 563, CS 564, CS 565.

3. Theory (at least 3 credits): CS 502, CS 506, CS 510, CS 515, CS 555, CS 561, CS 567, CS 571, CS 562.
Most courses are available during the regular semesters (Fall and Winter). The Master's project is normally available only during the Spring/Summer semester.

Students whose cumulative average falls under 65% will be restricted to 3 course per semester until their average is brought back to 65%. Failure to maintain a minimum of a 65% cumulative average may result in the student being required to withdraw from the program.

Stream change

Students in the Project stream can switch to the Thesis stream as long as they meet the following conditions: (a) they have taken and passed at least four graduate courses at Bishop's, (b) they have an average grade of 75 or better in the graduate courses taken at Bishop's, and (c) at least one faculty expresses interest in supervising their research toward the Master's thesis. No more than five graduate courses can be counted toward the requirements of the new program.

List of Graduate Courses

CS 500 Project I 3-3-0
This course can only be taken by M.Sc.-course-based (CONCSP) students. The goal is to pursue a research project under the supervision of a faculty member or opt for an internship at a public institution or a private company. The project or internship must be approved in advance by the department. It is also the responsibility of the student to find the internship and a faculty member of the department willing to supervise the proposed project. Students will be expected to submit a written report and to make at least one presentation on the project.
Prerequisites: Permission of the department and availability of a supervisor.

CS 501 The Internet of Things 3-3-0
How can companies deal with the vast amount of data coming from a variety of different devices? In the 'Internet of Things' there are many different devices, sensors and data logs. How can a computer scientist take this data and turn it into a readable or graphical form (dashboard) for people to make sense of. The course will consist of looking at how devices such as the 'Fitbit', smartphones, in house security systems send data over the Internet to a server and how this data can be interpreted into something that large corporations can use.

CS 502 Computational Topology 3-3-0
Computational topology uses topological concepts with efficient algorithms to analyze data and solve problems in many fields, including computer graphics and image analysis, sensor networks, clustering, robotics, and others. This course will present an introductory, self-contained overview of computational topology. This course has no formal prerequisites, but a basic mathematical knowledge in calculus and algebra at the senior undergraduate level and some familiarity with the use of computer packages (e.g., Matlab, R, C++, etc.) are expected. We will cover basic concepts from a number of areas of mathematics, such as abstract algebra, algebraic topology, and optimization. We will also look at algorithms and data structures, and efficient software for analyzing the topology of point sets and shapes – termed topological data analysis, or TDA.

CS 503 Data Visualization 3-3-0
The course explores analytical methods paired with appropriate visualizations for automated and human-assisted analysis for data sets. Several visualization techniques allowing to present data to an observer in a way that yields insight and understanding will be investigated. These big data analysis and visualization techniques are applied to data sets from a wide variety of scientific domains such as biology, physics, engineering, and medicine. The analysis and visualization methods will be illustrated through concrete examples.

CS 504 Programming Languages for Data Analysis 3-3-0
In this course students will be introduces to the most popular languages and software environments used in statistical computing and visualization. The course will involve significant programming projects in SAS, Weka, R and Python.

CS 505 Data Mining 3-3-0
Cross-listed with CS 405. Data is now created faster than humans are able to understand it and use it. There may be patterns hiding within this data with potentially useful information. This course will teach students, how to discover these patterns for the purpose of solving problems, gaining knowledge, and making predictions. Topics covered in this course include data preparation, clustering, classification, association rules for mining and models combination. This course includes assignments and a final project where the students are required to perform mining on real datasets. Students are expected to perform a substantial analysis of the data set, or prepare a research paper.

CS 506 Parallel Models and Algorithms 3-3-0
This course provides an introduction to the design and analysis of parallel algorithms and to the various models of parallel computation. The course will discuss parallel algorithms for problems such as: basic arithmetic, sorting, searching, selection, graph theory, matrix computations, combinatorial enumeration, optimization, computational geometry, and numerical analysis. Parallel computational models and their properties will be presented. Other typical topics include: complexity classes, and the parallel computation thesis.

CS 507 Statistical Learning 3-3-0
Statistical learning is concerned with modelling and understanding vast and complex datasets using methods rooted in statistics. The main objective is for the students to master how and when to apply statistical learning techniques in real world applications. Topics covered include linear regression, classification, linear discriminant analysis, tree based methods, support vector machines, graphical models, random forests and boosting. Projects illustrating how to implement each of the statistical learning methods are carried out using a statistical software package.

CS 508 Project II 3-3-0
This course can only be taken by M.Sc.-course-based (CONCSP) students who have already completed Project I course (CS 500). The goal is to further a study undertaken in Project I (CS 500). The project must be approved in advance by the department. It is also the responsibility of the student to find a faculty member of the department willing to supervise the proposed project or the internship. Students will be expected to submit a written report and to make at least one presentation on the project.
Prerequisites: CS 500, permission of the department, and availability of a supervisor.

CS 509 Pattern Recognition 3-3-0
This course addresses the fundamental theory and techniques of pattern and features classification in numerical data. Pattern recognition methods can be useful in diverse real world applications such as medical data processing, data mining, information retrieval, computer vision, handwriting and speech recognition, and more. The course topics include Bayesian decision theory, statistical classification, maximum likelihood estimation, nonparametric techniques, stochastic methods and unsupervised learning.

CS 510 Model-Based Testing of Reactive Systems 3-3-0
The course provides an in-depth exposure to the area of formal methods called model-based testing. Various testing models will be presented, including traces, may- and must-testing, refusals, and failure traces. Relations to related specification and verification techniques such as temporal logic and model checking will also be investigated. Students are expected to participate in the presentation of the lecture material and perform independent research.

CS 512 Computer Games Design 3-3-0
Cross-listed with CS 412. This course will explore the theory and practice of video game design and programming. Students will learn the basic concepts and techniques for the design and development of digital games. The topics covered in this course will include the history and taxonomy of video games, the basic building blocks of a game, computer graphics and programming, user interface and interaction design, and the software architecture for video games. Students are expected to prepare a research paper during the course, or pursue a larger applied project.

CS 515 Concurrent & Real-Time Systems 3-3-0
This course provides an introduction to a process algebra such as CSP. It then uses this language for the specification, analysis, and verification of concurrent and real-time systems. Finally, the course presents the use of such a process algebra as a formal method for concurrency at different stages in the development process.

CS 516 Volumetric Image Analysis & Visualization 3-3-0
Digital volumetric images are stacks of two dimensional image slices produced for instance by tomographic scanner. The goal of this course is to study the different techniques and algorithms for the analysis of volumetric images including a discussion about some sources of volumetric images, especially those occurring in medical imaging with different modalities (Radiology, Computed Tomography, Magnetic Resonance Imaging, Nuclear Medicine, Ultrasound, Positron Emission Tomography). The course will also address the different techniques used to display and visualize volumetric images including volume slicing, surface rendering, and volume rendering.

CS 520 Advanced Topics in Software 3-3-0
The course will present topics of current interest or research directions in software and related areas. The course content is expected to vary to reflect the current interests of students and faculty. Students are expected to participate in the presentation of the lecture material and engage in independent research.

CS 536 Web Mining 3-3-0
This course on web mining delves into the multidisciplinary realm at the forefront of analyzing and harnessing the abundant and diverse data accessible on the World Wide Web. The course delivers a comprehensive introduction to the fundamental principles, techniques, and practical applications of web mining, equipping students with the expertise to extract valuable insights from web-based data. Covered topics include, but are not limited to, association rules, machine learning, information retrieval and web search, social network analysis, web crawling, structured data extraction, information integration, opinion mining, sentiment analysis, and web usage mining. Furthermore, students will have the opportunity to participate in substantial projects, gaining hands-on experience with web mining tools. Upon completing the course, students will be well-prepared to proficiently navigate the intricate web data landscape and apply their skills in diverse real-world scenarios.
Note: Cross-listed with CS 436. Students may not take this course for credit if they have received credit for CS 436.

CS 550 Big Data Management and Analytics 3-3-0
In this course, students will learn the fundamental theory and techniques of Big Data management and analytics, and to apply them to resolve problems in real-world applications. The principle is to learn the strategic extraction and usage of information from large datasets. In fact, the students will exploit recent concepts and trends to manage and analyze Big Data. For that purpose, recently designed algorithmic approaches and technologies will be covered to help the students to manage and analyze large datasets. For that aim, the covered topics will include, but will not be limited to streaming algorithms, distributed file-system architecture, resilient distributed datasets, similarity search, recommendation systems, link analysis, edge computing, and federated machine learning. The students will work on large projects to practice the concepts presented in this course. In addition, the students will have to submit a paper on a topic related to their research.
Note: Students may not take this course for credit if they have received credit for CS 450.

CS 551 Deep Learning 3-3-0
Deep Learning, a cutting-edge subfield of machine learning, revolutionizes our approach to resolve complex artificial intelligence problems. This course provides students with a comprehensive understanding of deep learning techniques, including deep neural networks, Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Generative Adversarial Networks (GANs), Transformer, Generative pretrained Transformer (GPTs), and deep reinforcement learning. The course bridges theoretical foundations and practical implementation, equipping students to design, train, and evaluate deep neural networks for applications in image recognition, speech processing, natural language processing, bioinformatics, autonomous systems, and more. Throughout the semester, students engage in significant practical projects, applying deep learning to real-world artificial intelligence challenges and enhancing their skills for research and industry.

CS 555 Automata Theory & Computational Complexity 3-3-0
Cross-listed with CS 455. The course will address finite-state machines, context-free languages and pushdown automata, computability. A systematic study of the known relations between the most important resource bounded complexity classes, reductions, separation results and translation techniques is also included. Students are expected to prepare a research paper during the course.

CS 556 Compilers and Interpreters 3-3-0
Cross-listed with CS 406. This course is intended as an introduction to the fundamentals of language translation and compiler construction. Topics will include language theory and syntax; grammars, finite state machines, non-deterministic push-down automata; a thorough treatment of parsing methods covering top-down, bottom-up and precedence parsers; Syntax directed translation; Run-time environments; optimization and error recovery; code generation. Students are expected to implement complex semantic analysis and a complex compiler back-end. In particular they are expected to implement various aspects of machine code optimization.

CS 557 Database Software Design 3-3-0
Cross-listed with CS 457. This course covers how one can implement a Database Management system. Major topics are Storage management, Query processing, and Transaction management. As a basic assumption, data will not all fit in main memory, so algorithms and data structures appropriate for effective disk storage and quick access must be used. For example, one may use index structures such as B-trees or hash tables. We cover parsing of queries and optimizing of query plans. Finally, we cover durability of transactions using logging, and concurrency control for isolation of transactions. Additional topics in distributed databases are also presented. Students are expected to prepare a research paper during the course, or pursue a larger applied project.

CS 560 Software Engineering 3-3-0
Cross-listed with CS 410. Software is an engineered product that requires planning, analysis, design, implementation, testing and maintenance. This course is a presentation of the techniques used in each step of the software product process. Topics: software requirements analysis and specifications; software design process, object oriented design; testing, reliability and maintenance; automated design tools, programming environments. Students are expected to prepare a research paper during the course, and work on large applied projects.

CS 561 Discrete Structures and Computational Statistics 3-3-0
Sets and functions, Propositional logic, predicates and quantifiers, logical inference, mathematical induction, sequences, summations, recurrence relations, algorithms design and complexity analysis. In depth review of the basic concepts of probability and statistics, simple and multiple linear regressions and applications, analysis of variance. Classification Models: Overview of classification, linear methods, nearest neighbor classification, Bayes classification, logistic regression, linear discriminant analysis. Clustering.
Note: Students cannot receive credits for both CS 561 and MAT 529.

CS 562 Mathematical Models in Image Processing 3-3-0
Cross-listed with CS 462. Image processing is a rapidly growing field. As such, it requires and necessitates a number of mathematical models and domains to achieve efficient processing algorithms. Designing a successful processing technique invariably relies on having a successful model for images themselves. The mathematical techniques needed could range from Partial differential equations, Differential geometry, Morse theory, Topology, Algebraic topology, Wavelets, Statistical techniques, Calculus of variations, Numerical methods, Graph theory, and Optimization. The objective of this course is to discuss in depth a number of selected mathematical topics (and their use in image processing) that are of interest to the students at the moment the course is given.

CS 563 Image Analysis 3-3-0
Cross-listed with CS 463. Image analysis is concerned with the development of machine algorithms in order mimic the biological organism's ability to see and understand images and videos. The course content include: camera models and calibration, image enhancement, features extraction and representation, shape from shading, stereo and texture, optical flow, motion analysis, high level vision and case studies.

CS 564 Network Programming and Distributed Algorithms 3-3-0
Cross-listed with CS 464. The course presents computer networks at a functional level, with strong emphasis on programming distributed applications over a network. Discussion will be based on open networking and application standards such as the TCP/IP protocol suite and the Portable Operating System Interface (POSIX). The concept of distributed algorithms together with the associated challenges and examples are then presented. Programming distributed applications (in C or C++) is an integral part of the course. Students are expected to work on a large, distributed, and practically meaningful application as part of the course.

CS 565 Advanced Topics in Computer Applications 3-3-0
The course will present advanced topics of current interest or research directions in Computer Applications. The course content is expected to vary according to the interests of students and faculty. Students are expected to prepare a research paper during the course, or pursue an applied project.

CS 566 Advanced Topics in Artificial Intelligence 3-3-0
The aim of this course is to cover some advanced topics of current interest in artificial intelligence and their practical side. These topics include but are not limited to Bayesian learning approach, predictive analytics, neural networks, deep learning, generative adversarial networks, and reinforcement learning. Students are required to work on large projects based on the concepts presented in this course, and to submit a paper on a topic related to their research.

CS 567 Advanced Topics in Algorithms 3-3-0
Cross-listed with CS 467. The course covers some advanced aspects of algorithms and complexity. It studies the topic of NP- complete problems. Some specialized algorithms in several areas will be discussed, such as Bioinformatics, Computational Geometry and Network Flow.

CS 569 Special Topics in Computer Science 3-3-0
The course will present topics of current interest in Computer Science. The course content varies reflecting the interests of the faculty. Students are expected to participate in the presentation of the lecture material and engage in independent research.

CS 571 Graph Theory and Algorithms 3-3-0
This course provides an introduction to the combinatorial, algorithmic and algebraic aspect of graph theory. There will be a brief refresher of mathematical proof techniques. Topics will include paths and circuits, graph trees, planar graphs, graph colourings, and the Max Floss-Min Cut Theorem. Programming Assignments to implement graph algorithms (in Maple or Octave for example) will be required.
Note: See MAT 421/MAT 521. Students may not take this course for credit if they have received credit for MAT 421 or MAT 521.

CS 590 Master's Project 9-0-0
The Master's project asks students to pursue a topic or a set of topics in depth and is therefore a more substantial effort than the usual course work. The topics will be chosen by the department. In addressing the topics students must demonstrate that they have command of the subjects involved, and that they understand and are capable of employing research methods. They must also show evidence of perspective on the topics and must show that appropriate methodology has been understood and applied. The deliverable for the project is a report (with appended code if applicable) that, in addition to the above, should show that the students are capable of writing a professional technical document. This capstone project is mandatory for all students enrolled in the course-based Master's and cannot be replaced by other internal or external courses or projects. Students cannot take this course in the first or second terms of their program.

CS 596 Research Topics in Computer Science 3-3-0
This course provides an introduction to the primary and secondary sources of information in the computing science literature. Faculty discuss their own research objectives and present an overview of research issues in the major subject areas of Computer Science. Students are required to submit and present a paper on a topic that relates to their research.

CS 597 Graduate Seminar I 3-0-0
This course is the framework for the thesis proposal, which is the first step towards a Master's thesis. Such a proposal should lay the ground work for the thesis research by providing convincing arguments that the problem is worth solving and can be solved, followed by the research methodology that will be used toward solving the problem. It also provides a good yardstick against which the students can measure their own progress in their research. Students are expected to give one presentation outlining their proposal. Thesis proposals must also be submitted to the supervisor and approved by the department.

CS 598 Graduate Seminar II 3-3-0
The requirement of this course is a research report outlining the student's progress toward implementing the thesis proposal. This progress report is a small document that provides a brief outline of the investigation just started. The role of this report is to ensure that the graduate research is heading in the right direction. The report must be presented and submitted to the supervisor and approved by the department.
Prerequisite: CS 597.

CS 599 Master's Thesis 24-0-0
The Master's thesis should be an original research paper that is suitable for becoming part of a submission to a peer-reviewed academic journal. The thesis must comprise overall a coherent account of a unified research project rather than a collection of results. It must be expressed in a satisfactory literary form consistent with the discipline and display a scholarly approach to the subject and a thorough knowledge of it. The candidate should consult the thesis supervisor for guidance regarding the content of the manuscript and the graduate coordinator for information regarding formatting requirements.

MSc in Physics

Program Overview

The Master of Science (MSc) program is designed to give students a much deeper appreciation of physics while at the same time training them to become independent researchers and scientists. Graduate supervision is available in a wide variety of disciplines including astrophysics, exoplanetary science, theoretical cosmology, gravitational theory, field theory and particle physics.

Master's in Physics (45 credits) CONPHY

Students who have completed a BSc degree in physics with at least a B average will be considered for admission into the graduate program. Students who have completed only a major in the subject may be required to take additional courses at the Master's level. Students who have been admitted will be assigned a supervisor by the Chair of Physics and Astronomy. The student's research interests will be taken into consideration when a supervisor is assigned. Current areas of research in the department include astrophysics, gravity and cosmology, field theory, particle physics, and theoretical physics.

Course Requirements (MSc):

The MSc degree requires the successful defense of a thesis (15 credits), satisfactory participation in the seminar series (18 credits), and the completion of a minimum of 12 credits in course work. Course selection is determined in consultation with the thesis supervisor and departmental chair. All MSc students must make an oral presentation and defense of their thesis before graduating. The normal period for completion of the MSc degree requirements is two academic years (five semesters). The minimum number of credits required to complete the program is 45.

List of Courses

PHY 561 Quantum Mechanics I 3-3-0
Foundation of quantum mechanics; Schroedinger equation, angular momentum, central potentials, harmonic oscillator, hydrogen atom.
Note: Students who have received credit for PHY 461 may not enrol in this course.

PHY 562 Quantum Mechanics II 3-3-0
Matrix mechanics and applications of quantum mechanics to various branches of physics. Perturbation theory, scattering, molecular applications, and Hartree-Fock theory.
Note: Students who have received credit for PHY 462 may not enrol in this course.

PHY 564 Condensed Matter Physics 3-3-0
Topics to be studied include the one-electron theory of solids, energy bands, lattice vibrations, transport theory, and thermodynamic properties.
Note: Students who have received credit for PHY 464 may not enrol in this course.

PHY 565 Electromagnetic Theory 3-3-0
Static and dynamic electric and magnetic fields: Maxwell's equations and solutions involving plane waves. Covariant formulation of electromagnetic field theory.
Note: Students who have received credit for PHY 465 may not enrol in this course.

PHY 566 Theoretical Topics 3-3-0
Topics to be studied will be selected from the areas of special and general relativity, particle physics, astrophysics, and cosmology. In particular, the covariant nature of physics and various physical symmetries will be investigated.
Note: Students who have received credit for PHY 466 may not enrol in this course.

PHY 567 Advanced Statistical Mechanics 3-3-0
Derivation of the laws of thermodynamics from statistical principles. Quantum statistics, arbitrarily degenerate and relativistic perfect gases, transport theory, thermodynamic fluctuations, and low-temperature physics will also be studied.
Note: Students who have received credit for PHY 467 may not enrol in this course.

PHY 571 Advanced Quantum Theory 3-3-0
Topics to be studied include: Path integral and second quantization approaches to non-relativistic quantum mechanics. Feynman rules and diagrams. Relativistic quantum field of spin-zero particles.

PHY 572 Particle Physics 3-3-0
Quantum field theory of spin 1⁄2 and spin 1 particles will be introduced. Topics include: renormalization and the renormalization group; quantum electrodynamics and quantum chromodynamics; the Standard Model of particle physics; overview of string theory.

PHY 573 Advanced General Relativity 3-3-0
Topics to be studied include: differential geometry, Einstein equations, junction conditions, shell and dust collapse, gravitational waves, and black hole thermodynamics.

PHY 574 Cosmology 3-3-0
Topics to be studied include: Cosmology, inflation, dark energy, compact objects, relativistic fluid dynamics, gravitational lensing, and gravitational waves.
Note: Students who have received credit for PHY 474 may not enrol in this course.

PHY 575 Numerical Methods & Simulations 3-3-0
This course will cover selected topics in High Performance Computing including cellular automata, finite element methods, molecular dynamics, Monte Carlo methods, and multigrid methods, with applications to classical fields, fluid dynamics, materials properties, nanostructures, and biomolecules.

PHY 576 Stellar Astrophysics I 3-3-0
An introduction to the properties of stellar atmospheres and interiors. The equations of stellar evolution, nuclear energy generation, radiative transport and stellar model building will be studied. Further topics include the formation of starts, and the physics associated with supernovae, white dwarfs, neutron stars, and pulsars.
Note: Students who have received credit for PHY 476 may not enrol in this course.

PHY 577 Many-Body Quantum Theory in Condensed Matter Systems 3-3-0
The following topics will be studied: Green's functions at zero and finite temperature; the interacting electron gas; the Hubbard model and strongly correlated systems; electron-phonon interaction; superconductivity and superfluidity.

PHY 578 Selected Topics in Astronomy & Astrophysics 3-3-0
Topics to be determined in consultation with prospective students.

PHY 579 Selected Theoretical Topics 3-3-0
Topics to be determined in consultation with prospective students.

PHY 580F Graduate Seminar I 9-0-0
Students are expected to participate in the departmental seminar series and to make a presentation on either their own work or on a research-related topic. All M.Sc. students are normally expected to enroll in this course at the beginning of their first year of studies.
Offered alternate years with PHY 581.

PHY 581F Graduate Seminar II 9-0-0
Students in the second year of their degree program are expected to participate in the departmental seminar series and to make a presentation on either their own work or on a research-related topic.
Offered alternate years with PHY 580.

PHY 586 Stellar Astrophysics II 3-3-0
A detailed study of the physics that determines the evolution of stars during all of their possible phases. This includes radiative hydrodynamics and atmospheric modeling, specialized equations of state, and the nuclear physics needed to understand the various channels that lead to the creation of the heavy elements. The physics of neutrino production and detection will also be investigated. These topics will form the basis for a study of the evolution of supernovae and other high-energy phenomena in stellar astrophysics.

PHY 587 Exoplanet Astrophysics 3-3-0
Exoplanets are planets in orbit around distant stars. This course is designed as an introduction to the discovery and characterization of exoplanets. The application of transits, velocimetry, imaging and lensing will be studied. Exoplanet atmospheres, interiors and orbital dynamics will be studied. Further topics include demographics, biosignatures and exploration of our Solar System to understand the origins of life.
Note: Students who have received credit for PHY 487 may not enrol in this course.

PHY 488/

PHY 588 Statistics and Machine Learning for Physics 3-3-0
Theory and applications of modern techniques in statistics and machine learning for physics and astronomy. Topics covered include: frequentist statistics and Bayesian inference, dimensionality reduction, density estimation and clustering, regression and model selection, classification, Gaussian processes, and deep learning. Some frontier topics such as simulation-based inference and transformers will be covered.
Note: Students who received credit for PHY 488 may not enrol in this course.

PHY 600 Thesis Research Dissertation 15-0-0
Each student is required to carry out independent, publishable research that is presented in the form of a thesis. The research is conducted under the supervision of a faculty member. The thesis will be evaluated externally and must be successfully defended in a meeting for which the presentation of the thesis results is open to all members of the academic community.

Doctor of Psychology (PsyD) Clinical Psychology Profile (120 credits) CONPCL

Admission requirements

Students can apply to the Doctor of Psychology (PsyD), Clinical Psychology Profile with one of two different backgrounds:

1. UNIVERSITY STUDIES BASIS
The minimum requirements for admittance on the basis of university studies include:

- a bachelor's degree in psychology or equivalent [(1)],
- a minimum GPA of 3.6/4.3 (A- or 80%),
- proof of English language proficiency[(2)],
- proof of French language proficiency[(2)],
- an application file[(3)].

OR

2. SUFFICIENT PREPARATION BASIS
The minimum requirements for admittance on the basis of sufficient preparation include:

- membership in the Ordre des Psychologues du Québec (OPQ),
- proof of English language proficiency[(1)],
- an application file[(3)].

(1) The university studies must include all the elements of the common core required by the Ordre des Psychologues du Québec (42 credits) and have been completed in courses or training taken in the last 10 years:

Categories of courses	Credits
Biological bases of behavior	6
Social-cultural bases of behavior	6
Cognitive-affective bases of behavior	6
Developmental psychology	6
History of psychology and systems	3
Psychometry	3
Research methods	3
Data analysis (statistics)	3
Personality theories	3
Psychopathology	3
TOTAL	**42**

(2) Since English is the primary language of instruction and communication at Bishop's University, applicant's must demonstrate an adequate level of proficiency in English. Furthermore, to become a member of the Ordre des Psychologues du Québec and obtain a licence to practice graduates must have an appropriate knowledge of the French language that is to say, be able to speak, write and work in French.

As such, all applicants must provide proof of English and French language proficiency regardless of citizenship/immigration status in Canada. Please identify the entry below that best describes your situation in order to determine which additional supporting documentation you must provide with your application for admission:

ENGLISH PROFICIENCY

I. Completed a DEC at an English CEGEP in Quebec
   - **Document required:** Quebec permanent code

II. Completed at least three years of instruction at an accredited secondary institution, recognized by Bishop's University, where **English** is the primary language of instruction
   - **Document required:** High school transcript from the institution where English is the primary language of instruction

III. Completed/completing at least 30 credit hours (or equivalent to one full year of study) at a post-secondary institution, recognized by Bishop's University, where **English** is the primary language of instruction
   - **Document required**: Transcript of studies from the post-secondary institution where English is the primary language of instruction

IV. Completed a recognized **English** assessment with appropriate minimum score:
   - Duolingo English Test (DET) minimum score of 115 with no sub-score under 90
   - TOEFL minimum overall score of 90 (internet-based) with no component score below 20
   - IELTS academic test, minimum overall score of 6.5 with no component score below 6.0.
   - Cambridge English, minimum overall score of 176 on one of the following:
     B2 First
     C1 Advanced
     C2 Proficient
   - **Document Required:** Official English assessment test score report sent to Bishop's University directly from the testing organization.

FRENCH PROFICIENCY

I. Passed the fourth or fifth year secondary level examinations in French as the first language in Québec
   - **Document required:** Quebec permanent code

II. Completed a DEC at a French CEGEP in Quebec
   - **Document required:** Quebec permanent code

III. Completed at least three years of instruction at an accredited secondary institution, recognized by Bishop's University, where French is the primary language of instruction
   - **Document required:** High school transcript from the institution where French is the primary language of instruction

IV. Completed/completing at least 30 credit hours (or equivalent to one full year of study) at a post-second ary institution, recognized by Bishop's University, where French is the primary language of instruction
   - **Document required**: Transcript of studies from the post-secondary institution where French is the primary language of instruction

V. Completed/completing the Bishop's University French for Professional Integrity Micro-Certificate (15 credits – CONFPI)
   - **Document required:** Transcript of studies from Bishop's University

VI. Completed a recognized French assessment with appropriate minimum score:
   - TEFAQ/TEF Canada with a minimum score of B1^{+} to B2 in all four competencies.
   - TFI™ Test from Educational Testing Service with a minimum score of 700 on 990.
   - Bright Writing Solution test with a minimum score of 3.5.

     To pass the test you must register online.

(3) The application file includes:

- The **Admissions Form** (choose the Post-Graduate application form).
- An official copy of all **university-level transcripts**
- The Ordre des Psychologues du Québec **Common Core Requirements Form**

- The **Clinical Psychology Candidate Profile Form**

The application deadline for the fall semester is February 1. This includes submission of all required supporting documents. Distinctively, this program enrolls a cohort of 16 students once every 3 years. The first cohort started in the fall 2024 semester. The next cohort is expected to start in the fall 2027 semester.

This program's admissions and registration procedures are in accordance with the admissions conditions and regulations specific to the UQAC Doctor of Psychology, Clinical Psychology Profile.

Program overview

Ths program is designed for bilingual students (French and English), including prospective applicants from systemically underrepresented backgrounds, who intend to practice clinical psychology. As an *Université du Québec à Chicoutimi (UQAC) program* offered by extension at Bishop's University, it focuses on professional clinical psychology and will equip students to conduct psychological assessments and perform psychological interventions. This program is accredited by the Ordre des psychologues du Québec (OPQ), thus making program graduates eligible for OPQ membership.*

This program's objective is to produce psychologists able to assess and help various clienteles, drawing on the discipline's scientific knowledge and on a deep understanding of the needs and characteristics of individuals and communities. It is also aimed at producing rigorous psychologists able to use critical thinking in their professional decisions and to assess the effectiveness of their own interventions. Lastly, the program is aimed at producing psychologists who will contribute to the development and revitalization of professional practice.

** To become a member of the Ordre des Psychologues du Québec and obtain a licence to practice you must have an appropriate knowledge of the French language that is to say, be able to speak, write and work in French. Under section 35 of the Charter of the French Language you are deemed to have sufficient knowledge of French if you meet* **one (1) of the following conditions***:*

- You have completed at least three years of full-time secondary or post-secondary education in French.
- You have passed the French mother tongue exams in the 4th or 5th year of secondary school in Québec.
- You obtained a secondary school diploma (DES) in Québec in 1985-1986 or after.

Graduates who do not meet one of these conditions will need to obtain a certificate of knowledge of French after graduating from the Psy.D. program in order to become a member of the Ordre des Psychologues du Québec and obtain a licence to practice in Québec. The Office québécois de la langue française is responsible for issuing this certificate to those who have passed the exam. You can find more information about the exam on their website *www.oqlf.gouv.qc.ca/francisation/ordres_prof/ordres.html.*

Degree Requirements

The program is 120 credits, over 4 years (12 semesters) of full-time study which are distributed as follows:

Required courses (39 credits)

PSY 718	Conducting an Assessment and Psychodiagnosis with an Adult
PSY 720	Assessment of Children and Adolescents through Testing
PSY 711	Professional Ethics and Legal Issues
PSY 722	Research Seminar
PSY 713	Advanced Seminar in Psychopathology
PSY 741	Case Study: Evidence-Based Practice and Therapeutic Effectiveness
PSY 721	Clinical Psychopharmacology
PSY 728	Adult Intervention Methods
PSY 714	Seminar on Issues Related to Clients and Diversity
PSY 723	Application and Interpretation of Advanced Statistical Methods
PSY 716	Interdisciplinarity and Professional Communication
PSY 717	Consultation and Supervision
PSY 719	Clinical Seminars in Psychology and Health

Optional courses (6 credits)

6 credits from:

PSY 725	Advanced Seminar in Psychological Intervention Methods
PSY 726	Youth Intervention Methods
PSY 727	Mindfulness-based Interventions
PSY 729	Methods of Intervention with a Group
PSY 730	Methods of Intervention with a Couple and a Family
PSY 747	Special Topic in Psychology

Doctoral essay (26 credits)

PSY 724	Essay (26 cr)

Practicum courses (17 credits)

PSY 800	Observation Practicum in Psychology (1 cr)
PSY 801	Practicum 1A: Psychological Assessment and Introduction to Intervention (3 cr)
PSY 802	Practicum 1B: Psychological Assessment and Introduction to Intervention (3 cr)
PSY 803	Practicum 2A: Clinical Psychology (5 cr)
PSY 804	Practicum 2B: Clinical Psychology (5 cr)

Internship courses* (32 credits)

PSY 811	Internship 1 (5 cr)
PSY 812	Internship 2 (3 cr)
PSY 813	Internship 3 (3 cr)
PSY 814	Internship 4 (5 cr)
PSY 815	Internship 5 (3 cr)
PSY 816	Internship 6 (3 cr)
PSY 817	Internship 7 (5 cr)
PSY 818	Internship 8 (3 cr)
PSY 819	Internship 9 (2 cr)

** Internship consisting in a one-year residency, taking place in an institution providing psychological services, such as a school (primary, secondary, college or university) and/or health network institutions (CLSC, CIUSSS, CISSS, in particular), or in any other institution that promotes multidisciplinary teamwork. The work environment must be different from the one where the practicums were carried out. Active participation, considering research evidence, in all phases of client intervention (assessment, diagnosis, individual or group intervention, report writing, consultation with other professionals, training) are expected. Interventions include interactions with clients, their families and individuals present in their living environments (natural caregivers, stakeholders). Students are integrated into the workplace and participate in all aspects of institutional operations (team meetings, case discussions, consultations, supervision), and in professional development activities. They must apply their critical thinking towards practice and organizational functioning. The internship and its subdivisions (Internships 1 to 9) allow students to complete the minimum hours of practice in one or two work environments over a period of one year (based on OPQ criteria) under the supervision of one or more psychologists who meet OPQ standards.*

Program progressions

YEAR 1

Fall:

PSY 718	Conducting an Assessment and Psychodiagnosis with an Adult
PSY 720	Assessment of Children and Adolescents through Testing
PSY 711	Professional Ethics and Legal Issues
PSY 722	Research Seminar*
PSY 724	Doctoral Essay (26 credits)**

Winter:

PSY 713	Advanced Seminar in Psychopathology

Optional course in intervention

PSY 741	Case Study: Evidence-Based Practice and Therapeutic Effectiveness
PSY 800	Observation Practicum in Psychology (1 credit)
PSY 722	Research Seminar* (Continued)
PSY 724	Doctoral Essay – Continued (26 credits)**

Summer:

PSY 722	Research Seminar* (Continued)
PSY 724	Doctoral Essay – Continued (26 credits)**

YEAR 2

Fall:

PSY 721	Clinical Psychopharmacology
PSY 728	Adult Intervention Methods
PSY 801	Practicum 1A: Psychological Assessment and Introduction to Intervention (3 credits)
PSY 724	Doctoral Essay – Continued (26 credits)**

Winter:

PSY 714	Seminar on Issues Related to Clients and Diversity
PSY 723	Application and Interpretation of Advanced Statistical Methods
PSY 802	Practicum 1B: Psychological Assessment and Introduction to Intervention (3 credits)
PSY 716	Interdisciplinarity and Professional Communication
PSY 724	Doctoral Essay – Continued (26 credits)**

Summer:

PSY 724	Doctoral Essay – Continued (26 credits)**

YEAR 3

Fall:

PSY 803	Practicum 2A: Clinical Psychology (5 credits)
PSY 717	Consultation and Supervision
PSY 719	Clinical Seminars in Psychology and Health†
PSY 724	Doctoral Essay – Continued (26 credits)**

Winter:

PSY 804	Practicum 2B: Clinical Psychology (5 credits)

Optional course in intervention

PSY 719	Clinical Seminars in Psychology and Health† (Continued)
PSY 724	Doctoral Essay – Continued (26 credits)**

YEAR 4

Fall:

PSY 811	Internship 1 (5 credits)
PSY 812	Internship 2 (3 credits)
PSY 813	Internship 3 (3 credits)

Winter:

PSY 814	Internship 4 (5 credits)
PSY 815	Internship 5 (3 credits)
PSY 816	Internship 6 (3 credits)

Summer:

PSY 817	Internship 7 (5 credits)
PSY 818	Internship 8 (3 credits)
PSY 819	Internship 9 (2 credits)

**The PSY 722 Research Seminar is given over three semesters (fall, winter, summer).*

†The PSY 719 Clinical Seminars in Psychology and Health is given over two semesters (fall and winter).

***The student is registered in the 26-credit doctoral essay (SDPS724) for the first nine (9) semesters of the program, including the summer semesters.*

Grading scale

The following grading scale will be used to convert percentages to letter grades.

94% - 100%	=	A+	=	4.3
90% - 93%	=	A	=	4
86% - 89%	=	A-	=	3.7
80% - 85%	=	B+	=	3.3
76% - 79%	=	B	=	3
72% - 75%	=	B-	=	2.7
67% - 71%	=	C+	=	2.3
60% - 66%	=	C	=	2
0 – 59%	=	F	=	0

List of Courses

PSY 711 Professional Ethics and Legal Issues 3-3-0

Raise awareness about the psychologist's ethical and professional standards. Ethical principles, ethical decision-making in a multidisciplinary context, responsibilities towards the client, research subjects and the public. Confidentiality. Use of tests: extensions and limitations. Roles and responsibilities of the OPQ. Legislation, testimony, professional expertise in court. Prosecutions. Record keeping and private practice. Practical exercises using clinical vignettes similar to the reality in practice.

As part of the program extension, PSY 711 is the Bishop's equivalent to SDPS 711 at UQAC.

PSY 713 Advanced Seminar in Psychopathology 3-3-0

Deepen knowledge of psychopathology, based on scientifically recognized diagnostic categories (DSM-5) and integrate them into clinical practice. Diagnostic classifications (DSM-5) and complex cases (treatment-resistant or recurrent disorders, co-occurrences of a personality disorder or substance use). Applications to clinical situations or case studies, formulation of diagnostic hypotheses adapted to the person in his or her globality, strengths, vulnerabilities, current problem, and the different factors involved (developmental, sociocultural, neurological, and biological). Development of intervention strategies adapted to the pathology and to the person's characteristics (e.g., personality traits, attachment styles).

Prerequisite: PSY 718

As part of the program extension, PSY 713 is the Bishop's equivalent to SDPS 713 at UQAC.

PSY 714 Seminar on Issues Related to Clients and Diversity 3-3-0

Have an advanced personal and professional reflection and mastering of the literature on the major contemporary issues and current controversies in the field of psychology related to different types of clients and human diversity. Major contemporary issues and current controversies in psychology related to different types of clients and human diversity; differences in culture, religious beliefs, psychological or physical characteristics, gender, sexual orientations, socioeconomic contexts, practice environment or care settings. Theories and practice about skills necessary for advanced personal and professional reflection and development: critical thinking, self-awareness, interpersonal skills and abilities. Impacts and transfer of learning in interpersonal relationships and in the daily reality of clinical and professional practice.

As part of the program extension, PSY714 is the Bishop's equivalent to SDPS714 at UQAC.

PSY 716 Interdisciplinarity and Professional Communication 3-3-0

Develop effective professional communication skills appropriate to the context of psychology. Develop interprofessional knowledge and skills based on the National Interprofessional Competency Framework. Topics: teaching issues (course outlines, teaching strategies, assessment tools, etc.), knowledge translation (clinical reports, expert judgments, conferences, training workshop preparation, etc.), communication with the media, and interprofessionalism. Presentation of the different practice environments and their specificities.

As part of the program extension, PSY716 is the Bishop's equivalent to SDPS716 at UQAC.

PSY 717 Consultation and Supervision 3-3-0

Introduction to the role of consultant to psychologists or other professionals, individuals, groups, or organizations and to the role of supervisor to psychologists or other professionals. Consultation: historical context; contemporary theories and methods of consultation; different phases of the consultation process and systems organization; political, psychosocial, and systemic aspects of the dynamics of consultation as determinants of the role and activities of the consultant. Supervision: models and techniques for the development of supervisory competency; issues related to power relationships, to relationships between supervisor and supervisee as well as relationships of supervisees in group supervision; issues related to power relationships and differences (cultural, gender, ethnic). Practical applications: development of supervisory objectives that take into account the environment in which supervision is required, relevance of the choice of learning methods and supervision evaluation methods. Case analyses.

Prerequisite: PSY802

As part of the program extension, PSY717 is the Bishop's equivalent to SDPS717 at UQAC.

PSY 718 Conducting an Assessment and Psychodiagnosis with an Adult 3-3-0

Using adult assessment tests, make a diagnosis and communicate the results of the assessment verbally and in writing. Study the context and conduct of the adult psychological examination. Learn the different instruments in relation to the reason for the evaluation (intelligence, behaviour, personality, emotion). Learn and carry out a synthesis of the results, establishing a diagnosis and formulating recommendations for intervention based on the data from different psychological tests (according to different approaches) for an adult. Oral or written communication of results. Includes practicum activities (minimum of 90 hours).

As part of the program extension, PSY 718 is the Bishop's equivalent to SDPC 718 at UQAC.

PSY 719 Clinical Seminars in Psychology and Health 3-3-0

Present a variety of approaches and methods of assessment and intervention in psychology and health; learn about their application to different types of clients. This course is under the responsibility of one professor but the periods are shared with at least four other professors or lecturers (depending on the expertise of each and the themes chosen by the program). Its focus is the discovery of different fields of specialization in psychology and health.

As part of the program extension, PSY 719 is the Bishop's equivalent to SDPS719 at UQAC.

PSY 720 Assessment of Children and Adolescents through Testing 3-3-0

Develop and refine the use of tests with children and adolescents.

Administration, scoring and clinical interpretation of tests (intelligence, behavioral, personality, emotional, etc.) with children and adolescents. Anamnesis, psychometric instruments, and standardized screening scales (e.g., Wechsler scales). Interpretation and recommendations. Report writing and communication of results.

As part of the program extension, PSY 720 is the Bishop's equivalent to SDPS720 at UQAC.

PSY 721 Clinical Psychopharmacology 3-3-0

Understand the mechanisms of action, benefits and limitations of various psychotropic drugs used in the treatment of psychopathologies. Establish links between psychopharmacology and the professional practice of psychologists: examination of the concepts behind drug treatments of mental disorders and the place of psychotherapies. Be aware of and understand the impact of psychotropic drugs on the practice of psychologists. Elements of pharmacokinetics and pharmacodynamics, development of psychotropic drugs. Major families of neuromediators and psychopathologies associated with physiological dysfunctions. Classification, description, indications, risks and most important side effects of the main psychotropic drugs used (neuroleptics, antidepressants, mood stabilizers, anxiolytics, stimulants).

As part of the program extension, PSY 721 is the Bishop's equivalent to SDPS 721 at UQAC.

PSY 722 Research Seminar 3-3-0

Provide support and examples for the development and completion of the doctoral essay.

Reminder of important methodological and statistical notions to consider when developing a research project in psychology. Critical analysis of the structure and content of published scientific articles. Presentation of the APA writing standards. Presentation of the research ethics principles. Discussion of the challenges and obstacles encountered during the development of a project and the conduct of a scientific study. Discussion of stress and time management strategies. Development of a writing plan and a first draft of the doctoral essay. Oral presentation of the project to peers.

As part of the program extension, PSY7 22 is the Bishop's equivalent to SDPS 722 at UQAC.

PSY 723 Application and Interpretation of Advanced Statistical Methods 3-3-0

Students will deepen their understanding of how to implement and interpret the major multivariate tests used in psychological research. Students will also discuss and interpret the results of published research where the same statistical analyses were employed by other researchers. By the end of the course, students will be familiar with the main multivariate tests used in psychology, including their objectives, assumptions and limitations and be able to present the use of these analyses based on their rationale and interpretation of the results.

As part of the program extension, PSY 723 is the Bishop's equivalent to SDPS723 at UQAC.

PSY 724 Doctoral Essay 26-0-0

Produce a written statement outlining the results of a research activity, a creative work, or intervention project that will demonstrate the writer's ability to contribute to the development of his/her field of study. The production of scientific knowledge, which may originate in a practice environment or address a theoretical issue, that contributes to the advancement of knowledge in the field of professional psychology. Possibility of replicating an existing study, validating the development of a new intervention program or conducting a case study. Demonstration of the ability to master the various steps involved in conducting a basic or applied study. Presentation of the question under study, completion of an exhaustive literature review, presentation of the method used, execution of the appropriate analyses and justification of the conclusions based on the observed results.

As part of the program extension, PSY 724 is the Bishop's equivalent to SDPS 724 at UQAC.

PSY 725 Advanced Seminar in Psychological Intervention Methods 3-3-0

To become familiar with the theoretical, clinical and empirical foundations of a specific recognized psychological intervention approach.

As part of the program extension, PSY 725 is the Bishop's equivalent to SDPS 725 at UQAC.

PSY 726 Youth Intervention Methods 3-3-0

Introduction to clinical practice with children or adolescents.

Basic skills for working with children, adolescents or their parents; foundations of youth intervention; models and approaches to intervention based on scientific and evidence-based data when available. Linkages between theory, scientific literature, and clinical practice. Knowledge of guidelines, practice frameworks and evidence. Measuring the impact of a therapy.

As part of the program extension, PSY 726 is the Bishop's equivalent to SDPS 726 at UQAC.

PSY 727 Mindfulness-based Interventions 3-3-0

Acquire concepts from theoretical foundations and scientific studies that have evaluated the effects of mindfulness-based interventions on biopsychosocial health and psychological well-being.

Participation in a mindfulness-based intervention program and experiential foundations. Basic facilitation of mindfulness-based intervention programs. Adaptation of the mindfulness-based intervention to various types of clients. Integration of knowledge about mindfulness-based intervention into clinical practice in individual follow-ups.

As part of the program extension, PSY727 is the Bishop's equivalent to SDPS 727 at UQAC.

PSY 728 Adult Intervention Methods 3-3-0

Introduction to the practice of individual psychotherapy with adults and the development of a reflective practice. Foundations of intervention with adults; intervention models and techniques based on scientific and evidence-based data when available; measurement of therapeutic impact; identification of characteristics related to the technique and the therapist-client relationship that promote optimal therapeutic effectiveness in relation to the problem; knowledge of guidelines, practice frameworks and evidence.

Prerequisite: PSY 713

As part of the program extension, PSY 728 is the Bishop's equivalent to SDPC 728 at UQAC.

PSY 729 Methods of Intervention with a Group 3-3-0

Become familiar with the theoretical, clinical and empirical foundations of current practices in group psychotherapy.

Study of activities that promote optimal effectiveness of group psychotherapy based on clinical vignettes. Systemic and interactional perspective of the group. History of group intervention. Mechanisms of therapeutic change inherent in the group approach. Group design in relation to key targets of change, group composition, group setting and rules, therapist role, stages of group development, measures of change. Contemporary approaches to group psychotherapy.

Prerequisite: PSY801

As part of the program extension, PSY 729 is the Bishop's equivalent to SDPS 729 at UQAC.

PSY 730 Methods of Intervention with a Couple and a Family 3-3-0

Introduce students to the theoretical, clinical, and empirical foundations of current practices in couple and family psychotherapy. Prepare a therapeutic intervention that will facilitate the evolution of the couple and the family towards a better well-being and a better life.

Activities promoting adaptive functioning and well-being of couples and families based on clinical vignettes. Systemic and interactional perspective of the couple and family. History of couple and family intervention. Contemporary approaches to couple and family psychotherapy. Study of the rules, roles and communication governing these systems from a normal/abnormal functioning perspective.

Prerequisite: PSY 801

As part of the program extension, PSY 730 is the Bishop's equivalent to SDPS 730 at UQAC.

PSY 741 Case Study: Evidence-Based Practice and Therapeutic Effectiveness 3-3-0

Develop skills for the conduct of case studies for clinical practice, communication with professional colleagues, and scientific production. Rigour and best practices for case studies. Definitions, assumptions, criteria and types of case studies. Steps and content for formulating, conducting, and communicating a case study orally and in writing in a professional practice environment (private practice, institutional or other, multidisciplinary team) and in a research setting. Various methods of client assessment, information gathering, single case protocols (quasi-experimental and experimental), interventions, analyses, etc. Ethical considerations for case study. Evidence and clinical practice. Importance of ongoing evaluation. Methods for assessing the progress made by the client and the effectiveness of therapeutic or other interventions. Importance of interpersonal skills. Transfer of knowledge into clinical and professional practice. Formulation and communication of a case study.

As part of the program extension, PSY 741 is the Bishop's equivalent to SDPS 741 at UQAC.

PSY 747 Special Topic in Psychology 3-3-0

This individual activity will allow the student to deepen certain aspects related to his or her research theme, depending on the progress of his or her doctoral essay. Students must first submit a substantial and detailed work plan to be carried out during the course, which must be approved by the professor.

As part of the program extension, PSY 747 is the Bishop's equivalent to SDPS7 47 at UQAC.

PSY 800 Observation Practicum in Psychology 1-1-1

Observe a psychological assessment and intervention in a practical training context. Observation practicum at the Bishop's University Psychology Clinic. Observation and reflection on a psychological assessment and intervention done by a psychologist who meets OPQ standards, in compliance with the required ethics and deontology. A minimum of 15 hours of observation (assessment or intervention); 15 hours supporting group supervision; mandatory participation in at least one 1h30 case presentation; 6 hours of theoretical and practical training on suicide risk assessment and intervention with suicidal individuals; 7.5 hours allocated to other tasks, including completion of two mandatory assignments (a reflective paper and a term paper) (total of 45 hours).*

**Course description is pending official approval from Bishop's University Senate.*

Prerequisite: PSY 711

As part of the program extension, PSY 800 is the Bishop's equivalent to SDPC 800 at UQAC.

PSY 801 Practicum 1A: Psychological Assessment and Introduction to Intervention 3-0-3

Begin practical training in psychological assessment and intervention with at least two types of clients or intervention approaches and develop a critical perspective on practice.

Practicum must take place at the Bishop's University Psychology Clinic. Complete evaluation of at least two clients, including the entire process (identification of the reason for consultation, preparation of an evaluation estimate, use of measurement instruments, analysis and synthesis of the various results, development of recommendations for intervention, writing and submission of the report). Beginning of certain intervention processes that can be continued during Practicum 2A. Development of critical thinking and reflective thinking in relation to practice. Formal supervision of a minimum of 45 hours by a psychologist practicum supervisor who meets OPQ standards.

Prerequisite: PSY800

As part of the program extension, PSY 801 is the Bishop's equivalent to SDPC 801 at UQAC.

PSY 802 Practicum 1B: Psychological Assessment and Introduction to Intervention 3-0-3

Begin practical training in psychological assessment and intervention with at least two types of clients or intervention approaches and develop a critical perspective on practice.

Practicum must take place at the Bishop's University Psychology Clinic. Complete evaluation of at least two clients, including the entire process (identification of the reason for consultation, preparation of an evaluation estimate, use of measurement instruments, analysis and synthesis of the various results, development of recommendations for intervention, writing and submission of the report). Beginning of certain intervention processes that can be continued during Practicum 2A. Development of critical thinking and reflective thinking in relation to practice. Formal supervision of a minimum of 45 hours by a psychologist practicum supervisor who meets OPQ standards.

Prerequisite: PSY 801

As part of the program extension, PSY 802 is the Bishop's equivalent to SDPC 802 at UQAC.

PSY 803 Practicum 2A: Clinical Psychology 5-0-5

Initiate the practice of psychological assessment and intervention and begin the development of a critical and reflective approach to practice.

Practicum must take place at the Bishop's University Psychology Clinic (exceptions may apply). Contacts and follow-ups with clients in consultation and development of a planned approach. Constant reflection on the processes involved in the evaluation or intervention. Follow-up with a variety of clients and involvement in the various tasks related to the profession (assessment, diagnosis, intervention, consultation with other professionals, case discussions, report writing, professional development activities, use of research data, etc.). Development of critical thinking and reflective thinking in relation to practice. Formal supervision of a minimum of 45 hours by a psychologist practicum supervisor accredited according to OPQ standards.

Prerequisite: PSY 802

As part of the program extension, PSY 803 is the Bishop's equivalent to SDPC 803 at UQAC.

PSY 804 Practicum 2B: Clinical Psychology 5-0-5

Continue the practice of psychological assessment and intervention and begin the development of a critical and reflective approach to practice.

Practicum must take place at the Bishop's University Psychology Clinic (exceptions may apply). Contacts and follow-ups with clients in consultation and development of a planned approach. Constant reflection on the processes involved in the evaluation or intervention. Follow-up with a variety of clients and involvement in the various tasks related to the profession (assessment, diagnosis, intervention, consultation with other professionals, case discussions, report writing, professional development activities, use of research data, etc.). Development of critical thinking and reflective thinking in relation to practice. Formal supervision of a minimum of 45 hours by a psychologist practicum supervisor accredited according to OPQ standards.

Prerequisite: PSY 803

As part of the program extension, PSY 804 is the Bishop's equivalent to SDPC 804 at UQAC.

PSY 811 Internship I 5-0-5

Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.

Prerequisite: PSY 804

As part of the program extension, PSY 811 is the Bishop's equivalent to SDPS 811 at UQAC.

PSY 812 Internship 2 3-0-3

Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.

Prerequisite: PSY804

As part of the program extension, PSY 812 is the Bishop's equivalent to SDPS 812 at UQAC.

PSY 813 Internship 3 3-0-3

Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.

Prerequisite: PSY 804

As part of the program extension, PSY 813 is the Bishop's equivalent to SDPS 813 at UQAC.

PSY 814 Internship 4 5-0-5

Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.

Prerequisite: PSY8 13

As part of the program extension, PSY 814 is the Bishop's equivalent to SDPS 814 at UQAC.

PSY 815 Internship 5 3-0-3

Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.

Prerequisite: PSY 813

As part of the program extension, PSY 815 is the Bishop's equivalent to SDPS 815 at UQAC.

PSY 816 Internship 6 3-0-3
Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.
Prerequisite: PSY 813
As part of the program extension, PSY 816 is the Bishop's equivalent to SDPS 816 at UQAC.

PSY 817 Internship 7 5-0-5
Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.
Prerequisite: PSY 816
As part of the program extension, PSY 817 is the Bishop's equivalent to SDPS 817 at UQAC.

PSY 818 Internship 8 3-0-3
Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.
Prerequisite: PSY 816
As part of the program extension, PSY 818 is the Bishop's equivalent to SDPS 818 at UQAC.

PSY 819 Internship 9 2-0-2
Development of assessment and intervention practices in psychology for at least two types of clients or fields. Development of consultation and supervision skills, and a critical approach to practice, which includes the use of research evidence.
Prerequisite: PSY 816
As part of the program extension, PSY 819 is the Bishop's equivalent to SDPS 819 at UQAC.

Academic Regulations

Decisions relating to the student's progress, such as the choice of research director, the submission of a research subject, the duration of studies, registration, the terms of suspension and any other question likely to affect the student's academic progress, are taken in accordance with UQAC's Règlement relatif aux études (Doc 1163-02.001), the Procédure relative aux mémoires, essais doctoraux et thèses (Doc 072) and the Procédure relative aux restrictions à la poursuite des activités d'un programme d'études de cycles supérieurs (Doc 085).