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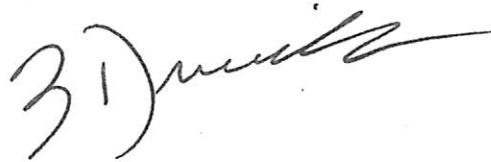
MEMORANDUM

ATTENTION Senate

DATE June 20, 2019

FROM Zoë Druick,
Acting Chair of Senate Graduate
Studies Committee (SGSC)

RE: Program Changes



For information:

Acting under delegated authority at its meeting of June 4, 2019, SGSC approved the following program changes, effective **Spring 2020**:

Faculty of Applied Sciences

School of Computing Science

- 1) Calendar revision (Degree Audit): Computing Science MSc and PhD
- 2) Calendar revision (Degree Audit): Computing Science Dual Degree MSc and PhD

School of Mechatronic Systems Engineering

- 3) Calendar revision (Degree Audit): Mechatronic Systems Engineering MASc and PhD

Faculty of Arts and Social Sciences

Department of Economics

- 4) Program change (calendar revision): Economics MA

Department of French

- 5) Calendar revision (Degree Audit): French MA

Department of Philosophy

- 6) Calendar revision (Degree Audit): Philosophy MA

Beedie School of Business

- 7) Program change (calendar revision): Management of Technology MBA
- 8) Program change (calendar revision): Business Administration PhD

MEMORANDUM

Attention Dr. Jeff Derksen Date May 16, 2019
Dean, Graduate Studies

From Dr. Parvaneh Saeedi psaeedi@sfu.ca
Faculty of Applied Science, Graduate Studies Committee

Re: FAS-CMPT Calendar Updates for Degree Audit Project

The followings are FAS's School of Computing submission for calendar update/reformatting due to the Degree Audit Project for:

School of Computing Science

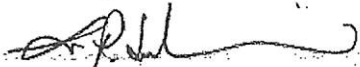
- Computing Science Master of Science,
- Computing Science Doctor of Philosophy,
- Computing Science Dual Degree Master of Science, and
- Computing Science Dual Degree Doctor of Philosophy.

Updates include:

1. Reformatting of calendar entries for all programs,
2. Program description for Computing Science MSc and PhD programs,
3. Minor updates for all programs.

These curriculum items should be effective for **Spring 2020**. Please include them on the next SGSC agenda.

Best Regards,



Parvaneh Saeedi,
Faculty of Applied Science, Graduate Studies Committee



COMPUTING SCIENCE

SpMEMO

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ATTENTION

Error!

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Parvaneh Saeedi, Associate Director

FROM

Ghassan Hamarneh, Graduate Director

RE

Calendar/course changes – Effective Spring 2020
Calendar reformatting and updates due to Degree Audit
Project. CMPT MSc, PhD and Dual Degree Program

DATE

May 14, 2019

Please accept our submission for calendar updates/reformatting due to the Degree Audit Project as:

Computing Science Master of Science
Computing Science Doctor of Philosophy
Computing Science Dual Degree Master of Science
Computing Science Dual Degree Doctor of Philosophy

Updates include:

- Reformatting of calendar entries for all programs
- Updated Program Descriptions for: Computing Science MSc and PhD Programs
- Minor updates for all programs

If you have any questions, please let me know.

Ghassan Hamarneh



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

School of Computing Science | Faculty of Applied Sciences
Simon Fraser University Calendar | Summer 2019

Computing Science

MASTER OF SCIENCE

The school offers both a master of science program with a thesis option, or with a project option, or with a course option.

Admission Requirements

To qualify for master of science (MSc) program admission, a student must satisfy the University admission requirements stated in section 1.3 of the graduate general regulations and must have a bachelor's degree or the equivalent in computing science or a related field.

Students who are enrolled in the MSc program may apply to transfer to the doctor of philosophy (PhD) program after two terms in the MSc program. The school's evaluation procedure for such applications is the same as that used for outside applicants.

Program Requirements

Students complete 30 units of graduate work in one of three options chosen at the time of admission: thesis option, project option or course option. Each option consists of graduate course and optional practicum work satisfying certain breadth requirements plus a depth requirement consisting of a thesis, project or portfolio document. Any change to a student's program option must be approved by the school's graduate program committee.

Breadth Requirement

For purposes of defining breadth requirements, courses are grouped into the five major areas shown in Table 1 (below). Courses not related to the breadth requirements are shown in Table 2 (below). Any courses completed outside the School of Computing Science must be approved by the student's senior supervisor and the director of the graduate program.

Only two special topics courses (two of CMPT 829, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889) may be used toward satisfaction of breadth requirements, except with permission of the graduate program breadth committee.

The courses used to satisfy the breadth requirements must include either CMPT 705 or 710, unless the student already has credit for one of these courses (or equivalent) from a previous degree as determined by the graduate program breadth committee

Any 700 division course used to satisfy the breadth requirement might be waived and replaced by an 800 division course. Students must produce convincing evidence to the graduate program committee that they have completed a comparable course or have comparable training in industry.

Thesis MSc students complete a breadth requirement of 15 units of graduate course or practicum work. At least 12 units must be completed through four courses drawn from Table 1 (below) so that at least one course must be from Area I - Algorithms and Complexity Theory and two of the four courses must be from two other Areas. Students may use one 3-unit practicum towards the 15 units of required course work.

Project MSc students complete a breadth requirement consisting, 24 units of graduate course or practicum work. At least 18 units must be completed through six courses drawn from Table 1 (below) so that at least one course must be from Area I - Algorithms and Complexity Theory and so that the six courses cover at least three different Areas. Students may use up to two 3-unit practicums towards the 24 unit requirement.

Course MSc students complete a breadth requirement consisting of 30 units of graduate course or practicum work. At least 18 units must be completed through six courses drawn from Table 1 (below) so that at least one course must be from Area I - Algorithms and Complexity Theory and so that the six courses cover at least three different Areas. Students may use up to three 3-unit practicums towards the 30 unit requirement.

Table 1

AREA I - ALGORITHMS AND COMPLEXITY THEORY

CMPT 701 - Computability and Logic (3)
CMPT 705 - Design and Analysis of Algorithms (3)
CMPT 710 - Computational Complexity (3)
CMPT 711 - Bioinformatics Algorithms (3)
CMPT 813 - Computational Geometry (3)
CMPT 814 - Algorithmic Graph Theory (3)
CMPT 815 - Algorithms of Optimization (3)
CMPT 881 - Special Topics in Theoretical Computing Science (3)

AREA II - NETWORKS, SOFTWARE AND SYSTEMS

CMPT 745 - Software Engineering (3)
CMPT 771 - Internet Architecture and Protocols (3)
CMPT 777 - Formal Verification (3)
CMPT 816 - Theory of Communication Networks (3)
CMPT 885 - Special Topics in Computer Architecture (3)
CMPT 886 - Special Topics in Operating Systems (3)

AREA III - ARTIFICIAL INTELLIGENCE

CMPT 721 - Knowledge Representation and Reasoning (3)
CMPT 726 - Machine Learning (3)
CMPT 823 - Formal Topics - Knowledge Representation (3)
CMPT 825 - Natural Language Processing (3)
CMPT 827 - Intelligent Systems (3)
CMPT 882 - Special Topics in Artificial Intelligence (3)

AREA IV - DATABASES, DATA MINING AND COMPUTATIONAL BIOLOGY

CMPT 740 - Database Systems (3)
CMPT 741 - Data Mining (3)

CMPT 829 - Special Topics in Bioinformatics (3)
CMPT 843 - Database and Knowledge-base Systems (3)
CMPT 884 - Special Topics in Database Systems (3)

AREA V - GRAPHICS, HCI, VISION AND VISUALIZATION

CMPT 764 - Geometric Modelling in Computer Graphics (3)
CMPT 767 - Visualization (3)
CMPT 820 - Multimedia Systems (3)
CMPT 822 - Computational Vision (3)
CMPT 828 - Illumination in Images and Video (3)
CMPT 888 - Special Topics in Computer Graphics, HCI, Vision and Visualization (3)

Table 2

CMPT 626 - Graduate Co-op Practicum I (3)
CMPT 627 - Graduate Co-op Practicum II (3)
CMPT 628 - Graduate Co-op Practicum III (3)
CMPT 880 - Special Topics in Computing Science (3)
CMPT 889 - Special Topics in Interdisciplinary Computing (3)
CMPT 894 - Directed Reading (3)

The course requirements have a distribution requirement to ensure breadth across the major areas that are defined in Table 1 (above). This requirement specifies the number of courses selected from each of the five major Areas.

Depth Requirement

Students who choose the thesis option will demonstrate depth of knowledge in their research area through a thesis defence based on their independent work. Students should consult with their supervisory committee members, and formulate and submit a written thesis proposal for approval no later than the third term. Thesis students register in CMPT 898 during the terms in which they are conducting thesis research.

Students who choose the project option will choose an area of specialization and submit a project report. Project topics may include a comprehensive survey of the literature of some computing science related research areas; implementation and evaluation of existing techniques/algorithms; development of interesting software/hardware applications. Project students register in CMPT 897 during the terms in which they are conducting project work.

Regulations specifying the examining committee's composition and procedures for the thesis or project exam appear in the graduate general regulations.

Students who choose the course option will submit a brief portfolio document that describes their selection of graduate courses and explains how this set of courses contributes to their areas of expertise. Course students are required to register in their chosen courses each term and will be registered by the department in CMPT 896 during their final term only.

Supervisory Committees

A supervisory committee consists of the student's senior supervisor, at least one other computing science faculty member, and others (typically faculty) as appropriate. The choice of senior supervisor should be made by mutual consent of the graduate student and faculty member based on commonality of research interests. The student and senior supervisor should consult on the remainder of the committee members.

Graduate general regulation 1.6 specifies that a senior supervisor be appointed normally no later than the beginning of the student's third term in the program, and that the remainder of the supervisory committee be chosen normally in the same term in which the

senior supervisor is appointed.

Accelerated Master's Program in Computing Science

Students in a Bachelor's degree program at SFU are qualified to be admitted into the Accelerated Master's program in Computing Science provided that they have satisfactorily completed at least 90 credits of undergraduate work with a CGPA of at least 3.67/4.33 including at least 24 credits of upper division CMPT course work. To be admitted to the program, the student must submit evidence, usually reference letters, from qualified referees of the student's ability to undertake advanced work in the area of interest, and must satisfy typical admission requirements set by the graduate program committee.

Students in the Accelerated Master's programs must fulfill the degree requirements of both the bachelor's program and the master's program in Computing Science. A minimum CGPA of 3.0 should be maintained while in the graduate portion of the program. The culmination of the Accelerated program is the master's degree. Students are expected to complete the master's degree within 12 months of completion of the bachelor's degree for a course-based, non-thesis master's degree, and within 18 months for a master's program requiring a thesis.

Students admitted into the Accelerated Master's program may take up to 9 units of graduate courses (the "Accelerated courses") that may be counted towards both the bachelor's degree and the master's degree subject to the following conditions:

Only courses listed in the five breadth areas of Table I above may be taken as Accelerated courses.

At most two courses from any one area may be used.

At most one course numbered 800 or above may be used.

The Accelerated courses may be used towards the master's program requirements of the thesis option only if all other requirements are met within 18 months of completion of the bachelor's degree requirements.

The Accelerated courses may be used towards master's program requirements of a non-thesis option only if all other requirements are met within 12 months of completion of the bachelor's degree requirements.

Transferring from the Accelerated program to the regular program is possible. A student may withdraw at any time from an approved Accelerated Master's program by informing the Chairs of the Undergraduate and Graduate Programs and the Dean of Graduate Studies in writing.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

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REVISED
CALENDAR ENTRY

Computing Science

MASTER OF SCIENCE

Description of Program

The Master of Science (MSc) in Computing Science is a research-intensive program that has a primary emphasis on the MSc thesis. The program provides an environment for education in theoretical and applied Computer Science. Through training in formal coursework and hands-on research in areas such as artificial intelligence, computer systems and networks, computer graphics, and data mining, graduates will be capable of working with integrity to design, improve, and apply cutting-edge computational techniques to support a career in academia, industry or the public sector.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar and have a bachelor's degree or the equivalent in computing science or a related field.

Program Requirements

All students are admitted to the thesis option and then transferred to the project or course option with consent. Any change to a student's program must be approved by the school's graduate program committee.

This program consists of course work, an optional internship, and a thesis, project, or course option for a minimum of 30 units.

Students must complete one of
CMPT 705 - Design and Analysis of Algorithms (3)
CMPT 710 - Computational Complexity (3)

and two courses from two other areas

and one course from any area

and an additional three units of graduate courses or internship from Table 2 with approval of supervisor and Graduate Chair

and the requirements from one of the three options below.

Thesis Option

and a thesis

CMPT 898 - MSc Thesis (15)

Project Option

and two additional course from any area in Table I

and an additional three units of graduate courses

and a project

CMPT 897 - MSc Project (6)

REVISED CALENDAR ENTRY

Course Option

and an additional 12 units of graduate courses

and portfolio

CMPT 896 - MSc Portfolio (0)

Breadth requirements

For purposes of defining breadth requirements, courses are grouped into the five major areas shown in Table 1. Courses not related to the breadth requirements are shown in Table 2. Any courses completed outside the School of Computing Science must be approved by the student's supervisor and the director of the graduate program.

Table 1

AREA I – ALGORITHMS AND COMPLEXITY THEORY

- CMPT 701 - Computability and Logic (3)
- CMPT 705 - Design and Analysis of Algorithms (3)
- CMPT 710 - Computational Complexity (3)
- CMPT 711 - Bioinformatics Algorithms (3)
- CMPT 813 - Computational Geometry (3)
- CMPT 814 - Algorithmic Graph Theory (3)
- CMPT 815 - Algorithms of Optimization (3)
- CMPT 981 – Special Topics in Theoretical Computing Science (3)

AREA II – NETWORKS, SOFTWARE AND SYSTEMS

- CMPT 745 - Software Engineering (3)
- CMPT 771 – Computer Networks (3)
- CMPT 777 - Formal Verification (3)
- CMPT 816 - Theory of Communication Networks (3)
- CMPT 982 – Special Topics in Networks and Systems (3)
- CMPT 886 - Special Topics in Operating Systems (3)

AREA III – ARTIFICIAL INTELLIGENCE

- CMPT 721 - Knowledge Representation and Reasoning (3)
- CMPT 726 - Machine Learning (3)
- CMPT 823 - Formal Topics - Knowledge Representation (3)
- CMPT 825 - Natural Language Processing (3)
- CMPT 827 - Intelligent Systems (3)
- CMPT 983 – Special Topics in Artificial Intelligence (3)

AREA IV – DATABASES, DATA MINING AND COMPUTATIONAL BIOLOGY

- CMPT 740 - Database Systems (3)
- CMPT 741 - Data Mining (3)
- CMPT 829 - Special Topics in Bioinformatics (3)
- CMPT 843 - Database and Knowledge-base Systems (3)
- CMPT 984 – Special Topics In Databases, Data Mining, Computational Biology (3)

AREA V – GRAPHICS, HCI, VISION, AND VISUALIZATION

- CMPT 764 - Geometric Modelling in Computer Graphics (3)
- CMPT 767 - Visualization (3)
- CMPT 820 - Multimedia Systems (3)
- CMPT 822 - Computational Vision (3)

REVISED CALENDAR ENTRY

CMPT 828 - Illumination in Images and Video (3)

CMPT 985 – Special Topics in Graphics, HCI, Visualization, Vision, Visualization Multimedia (3)

Table 2

CMPT 631 – Industrial Internship (3)

CMPT 980 – Special Topics in Computing Science (3)

CMPT 889 - Special Topics in Interdisciplinary Computing (3)

CMPT 894 - Directed Reading (3)

NOTE: SFU students enrolled in the Accelerated Master's within the School of Computing Science may apply a maximum of 9 graduate course units, taken while completing the bachelor's degree, towards the upper division undergraduate electives of the bachelor's program and the requirements of the master's degree. These courses need to be selected in consultation with the supervisor. For more information go to: <https://www.sfu.ca/dean-gradstudies/future/academicprograms/AcceleratedMasters.html>.

Program Length

Students are expected to complete the program requirements in five terms.

Other Information

Supervisory Committee

A supervisory committee consists of the student's supervisor, at least one other computing science faculty member, and others (typically faculty) as appropriate. The choice of supervisor should be made by mutual consent of the graduate student and faculty member based on commonality of research interests. The student and supervisor should consult on the remainder of the committee members.

Transfer from MSc to PhD program

Students who are enrolled in the MSc program may apply to transfer to the doctor of philosophy (PhD) program after two terms and normally before the seventh term. Students must have a CGPA of 3.5 or above, completed 75% of the required master's course work and evidence must be provided that the student is capable of undertaking substantial original research.

Thesis Option

Students in the thesis option will demonstrate depth of knowledge in their research area through a thesis defence based on their independent work. Students should consult with their supervisory committee members, and formulate and submit a written thesis proposal for approval no later than the third term. Thesis students register in CMPT 898 during the terms in which they are conducting thesis research.

Project Option

Students in the project option will choose an area of specialization and submit a project report. Project topics may include a comprehensive survey of the literature of some computing science related research areas; implementation and evaluation of existing techniques/algorithms; development of interesting software/hardware applications. Project students register in CMPT 897 during the terms in which they are conducting project work. The project is examined as a thesis and will need to be submitted to the library as per Graduate General Regulation 1.11.

REVISED CALENDAR ENTRY

Course Work

The courses used to satisfy the breadth requirements must include either CMPT 705 or 710, unless the student already has credit for one of these courses (or equivalent) from a previous degree as determined by the graduate program breadth committee.

Only two special topics courses may be used toward satisfaction of breadth requirements, except with permission of the graduate program breadth committee.

Any 700 division course used to satisfy the breadth requirement may be waived and replaced by an 800 division course. Students must produce convincing evidence to the graduate program committee that they have completed a comparable course or have comparable training in industry.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

School of Computing Science | Faculty of Applied Sciences
Simon Fraser University Calendar | Summer 2019

Computing Science

DOCTOR OF PHILOSOPHY

Admission Requirements

To qualify for program admission, a student must satisfy the University admission requirements stated in graduate general regulations 1.3 and

- have a master's degree or the equivalent in computing science or a related field or

- have a bachelor's degree or the equivalent in computing science or a related field, with a cumulative grade point average of 3.5 (on a scale of 0.0-4.0) or the equivalent.

At its discretion, the school's graduate admissions committee may offer PhD admission to students applying to the PhD program without a master's degree or equivalent in computing science or a related field.

Program Requirements

Students will demonstrate breadth of knowledge, and demonstrate the capacity to conduct original research through completion and defence of an original thesis. A PhD degree program should be completed within 12 terms and should not require longer than 15 terms. Students must achieve a minimum 3.4 CGPA and passing grades in all courses.

Breadth Requirement

For purposes of defining breadth requirements, courses are grouped into the five major areas shown in Table 1. Courses not related to the breadth requirements are shown in Table 2. Any courses completed outside the School of Computing Science must be approved by the student's senior supervisor and the director of the graduate program.

The courses used to satisfy the breadth requirements must include either CMPT 705 or 710, unless the student already has credit for one of these courses (or equivalent) from a previous degree as determined by the graduate program breadth committee.

Only two special topics courses (two of CMPT 829, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889) may be used toward satisfaction of breadth requirements, except with permission of the graduate program breadth committee.

PhD students who already possess an MSc in computing science or a related field must complete a breadth requirement of 12 units of graduate course work. At least 9 units must be completed through three courses drawn from Table 1 so that they are all in different areas.

PhD students who do not possess an MSc in computing science or a related field must complete a breadth requirement of 24 units of graduate course work. At least 18 units must be completed through six courses drawn from Table 1 and at least one course must be from Area I (Algorithms and Complexity Theory) so that the six courses cover at least three different areas.

PhD students may enter the Computing Science Graduate Co-operative Education Program but may not count practicums towards the breadth requirement.

Table 1

AREA I - ALGORITHMS AND COMPLEXITY THEORY

- CMPT 701 - Computability and Logic (3)
- CMPT 705 - Design and Analysis of Algorithms (3)
- CMPT 710 - Computational Complexity (3)
- CMPT 711 - Bioinformatics Algorithms (3)
- CMPT 813 - Computational Geometry (3)
- CMPT 814 - Algorithmic Graph Theory (3)
- CMPT 815 - Algorithms of Optimization (3)
- CMPT 881 - Special Topics in Theoretical Computing Science (3)

AREA II - NETWORKS, SOFTWARE AND SYSTEMS

- CMPT 745 - Software Engineering (3)
- CMPT 771 - Internet Architecture and Protocols (3)
- CMPT 777 - Formal Verification (3)
- CMPT 816 - Theory of Communication Networks (3)
- CMPT 885 - Special Topics in Computer Architecture (3)
- CMPT 886 - Special Topics in Operating Systems (3)

AREA III - ARTIFICIAL INTELLIGENCE

- CMPT 721 - Knowledge Representation and Reasoning (3)
- CMPT 726 - Machine Learning (3)
- CMPT 823 - Formal Topics - Knowledge Representation (3)
- CMPT 825 - Natural Language Processing (3)
- CMPT 827 - Intelligent Systems (3)
- CMPT 882 - Special Topics in Artificial Intelligence (3)

AREA IV - DATABASES, DATA MINING AND COMPUTATIONAL BIOLOGY

- CMPT 740 - Database Systems (3)
- CMPT 741 - Data Mining (3)
- CMPT 829 - Special Topics in Bioinformatics (3)
- CMPT 843 - Database and Knowledge-base Systems (3)
- CMPT 884 - Special Topics in Database Systems (3)

AREA V - GRAPHICS, HCI, VISION AND VISUALIZATION

- CMPT 764 - Geometric Modelling in Computer Graphics (3)
- CMPT 767 - Visualization (3)

CMPT 820 - Multimedia Systems (3)
CMPT 822 - Computational Vision (3)
CMPT 828 - Illumination in Images and Video (3)
CMPT 888 - Special Topics in Computer Graphics, HCI, Vision and Visualization (3)

Table 2

CMPT 880 - Special Topics in Computing Science (3)
CMPT 889 - Special Topics in Interdisciplinary Computing (3)
CMPT 894 - Directed Reading (3)

The course requirements have a distribution requirement to ensure breadth across the major areas that are defined in Table 1. This requirement specifies the number of courses selected from each of the five major areas.

Depth Requirement and Examination

Students demonstrate depth of knowledge in their research area through a public depth seminar/oral examination, give a thesis proposal seminar, and submit and defend a thesis based on their independent work which makes an original contribution to computing science.

The depth seminar and examination may be scheduled at any time following the completion of breadth requirements. Typically this is between the fifth and seventh term in the program; a recommendation is made by the graduate breadth committee, in proportion to the amount of course work required to satisfy the breadth requirement.

The examining committee consists of the supervisory committee and one or two additional examiners recommended by the examining committee, and approved by the graduate program committee. The depth exam centres on the student's research area. The examining committee, in consultation with the student, specifies the examination topics. The student prepares a written survey and gives a public depth seminar; the oral exam follows, and then the committee evaluates the student's program performance. The committee's evaluation is diagnostic, specifying additional work in weak areas if such exists. A second depth exam or withdrawal from the program may be recommended in extreme cases.

Thesis Proposal and Defence

The student, in consultation with the supervisory committee, formulates and submits, for approval, a written thesis proposal consisting of a research plan and preliminary results. The student gives a seminar and defends the originality and feasibility of the proposed thesis to the supervisory committee. The thesis proposal is normally presented and defended within three terms of the depth examination.

Regulations specifying the examining committee composition and procedures for the final public thesis defence are in the graduate general regulations. PhD students present a seminar; typically this will be about their thesis research and is presented in the interval between distribution of the thesis to the committee and the final thesis defence.

Supervisory Committees

A supervisory committee consists of the student's senior supervisor, at least one other computing science faculty member, and others (typically faculty) as appropriate. The choice of senior supervisor should be made by mutual consent of the graduate student and faculty member based on commonality of research interests. The student and senior supervisor should consult on the remainder of the committee members.

Graduate general regulation 1.6 specifies that a senior supervisor be appointed normally no later than the beginning of the student's third term in the program, and that the remainder of the supervisory committee be chosen normally in the same term in which the senior supervisor is appointed.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

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REVISED
CALENDAR ENTRY

Computing Science

DOCTOR OF PHILOSOPHY

Description of Program

The Doctor of Philosophy (PhD) in Computing Science, is a research-intensive program that has a primary emphasis on the thesis. The Program provides an environment for interdisciplinary education in theoretical and applied Computer Science. Through training in formal coursework and hands-on research in areas such as artificial intelligence, computer systems and networks, computer graphics, and data mining, graduates will be capable of working with integrity to design, improve, and apply cutting-edge computational techniques to support a career in academia, industry or the public sector.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar and have a master's degree or the equivalent in computing science or a related field, or have a bachelor's degree or the equivalent in computing science or a related field, with a cumulative grade point average of 3.5.

At its discretion, the school's graduate admissions committee may recommend PhD admission to students applying to the PhD program without a master's degree or equivalent in computing science or a related field.

Program Requirements

This program consists of course work and a thesis for a minimum of 18 units. Students will demonstrate breadth of knowledge, and the capacity to conduct original research through completion and defence of an original thesis. If a student does not have an MSc in Computing Science (or equivalent), an additional 5 graduate courses will be required in consultation with the supervisor.

From Area I students must complete one of
CMPT 705 - Design and Analysis of Algorithms (3)
CMPT 710 - Computational Complexity (3)

and two courses from two other areas

and three additional graduate units

and a thesis
CMPT 899 - PhD Thesis (6)

Breadth requirements

For purposes of defining breadth requirements, courses are grouped into the five major areas shown in Table 1 below. Courses not related to the breadth requirements are shown in Table 2. Any courses completed outside the School of Computing Science must be approved by the student's supervisor and the director of the graduate program.

Table 1

AREA I - ALGORITHMS AND COMPLEXITY THEORY
CMPT 701 - Computability and Logic (3)
CMPT 705 - Design and Analysis of Algorithms (3)

REVISED CALENDAR ENTRY

CMPT 710 - Computational Complexity (3)
CMPT 711 - Bioinformatics Algorithms (3)
CMPT 813 - Computational Geometry (3)
CMPT 814 - Algorithmic Graph Theory (3)
CMPT 815 - Algorithms of Optimization (3)
CMPT 981 - Special Topics in Theoretical Computing Science (3)

AREA II – NETWORKS, SOFTWARE AND SYSTEMS

CMPT 745 - Software Engineering (3)

CMPT 771 - Computer Networks (3)
CMPT 777 - Formal Verification (3)
CMPT 816 - Theory of Communication Networks (3)
CMPT 982 - Special Topics in Networks and Systems (3)
CMPT 886 - Special Topics in Operating Systems (3)

AREA III – ARTIFICIAL INTELLIGENCE

CMPT 721 - Knowledge Representation and Reasoning (3)
CMPT 726 - Machine Learning (3)
CMPT 823 - Formal Topics - Knowledge Representation (3)
CMPT 825 - Natural Language Processing (3)
CMPT 827 - Intelligent Systems (3)
CMPT 983 - Special Topics in Artificial Intelligence (3)

AREA IV – DATABASES, DATA MINING AND COMPUTATIONAL BIOLOGY

CMPT 740 - Database Systems (3)
CMPT 741 - Data Mining (3)
CMPT 829 - Special Topics in Bioinformatics (3)
CMPT 843 - Database and Knowledge-base Systems (3)
CMPT 984 - Special Topics In Databases, Data Mining, Computational Biology (3)

AREA V – GRAPHICS, HCI, VISION, AND VISUALIZATION

CMPT 764 - Geometric Modelling in Computer Graphics (3)
CMPT 767 - Visualization (3)
CMPT 820 - Multimedia Systems (3)
CMPT 822 - Computational Vision (3)
CMPT 828 - Illumination in Images and Video (3)
CMPT 985 - Special Topics in Graphics, HCI, Visualization, Vision, Visualization Multimedia (3)

Table 2

CMPT 980 - Special Topics in Computing Science (3)
CMPT 889 - Special Topics in Interdisciplinary Computing (3)
CMPT 894 - Directed Reading (3)

Program Length

Students are expected to complete the program requirements in 12 to 15 terms (4 to 5 years).

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Other Information

Transfer from MSc to PhD program

Students enrolled in the MSc program may apply to transfer to the doctor of philosophy (PhD) program after two terms and normally before the seventh term. Students must have a CGPA of 3.5 or above, completed 75% of the required master's course work and evidence must be provided that the student is capable of undertaking substantial original research.

Breadth Requirement

PhD students may enter the Computing Science graduate internship but may not count it towards the breadth requirement. Only two special topics courses may be used toward satisfaction of breadth requirements, except with permission of the graduate program breadth committee.

Depth Seminar

Students demonstrate depth of knowledge in their research area through a public depth seminar, which may be scheduled at any time following the completion of breadth requirements. Typically this is between the fifth and seventh term in the program; a recommendation is made by the graduate breadth committee, in proportion to the amount of course work required to satisfy the breadth requirement.

The examining committee consists of the supervisory committee and one or two additional examiners recommended by the examining committee, and approved by the graduate program committee. The depth exam centers on the student's research area. The examining committee, in consultation with the student, specifies the examination topics. The student prepares a written survey and gives a public depth seminar; the oral exam follows, and then the committee evaluates the student's program performance. The committee's evaluation is diagnostic; specifying additional work in weak areas if such exists. A second depth exam or withdrawal from the program may be recommended in extreme cases.

Thesis Proposal

The student, in consultation with the supervisory committee, formulates and submits, for approval, a written thesis proposal consisting of a research plan and preliminary results. The student gives a seminar and defends the originality and feasibility of the proposed thesis to the supervisory committee. The thesis proposal is normally presented and defended within three terms of the depth examination.

Thesis Defence

Regulations specifying the examining committee composition and procedures for the final public thesis defence are in the graduate general regulations.

Supervisory Committee

A supervisory committee consists of the student's supervisor, at least one other computing science faculty member, and others (typically faculty) as appropriate. The choice of supervisor should be made by mutual consent of the graduate student and faculty member based on commonality of research interests. The student and supervisor should consult on the remainder of the committee members.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

School of Computing Science | Faculty of Applied Sciences
Simon Fraser University Calendar | Summer 2019

Computing Science Dual Degree

MASTER OF SCIENCE

Students in this graduate dual degree program (GDDP), jointly developed by Simon Fraser University and Zhejiang University (ZJU), China, will acquire two graduate degrees. Graduates will receive a master of science (MSc) degree from Simon Fraser University, and a master of software engineering (MSE) degree from Zhejiang University. Students will study and conduct research at both universities.

The language of instruction at Simon Fraser University is English, while at Zhejiang University, it is either English and/or Chinese.

Admission Requirements

Students must be admitted to one university, and then apply and be admitted to the other university.

To qualify for admission, students must satisfy the usual admission requirements as specified by each university. The university of first admission will be referred to as the student's 'home' university. Students whose home university is Simon Fraser University are called SFU students while those whose home university is Zhejiang are called ZJU students.

Once admitted to the home university, the student may then apply for admission to the graduate dual degree program normally within 12 months of the date of admission to the home university graduate program. The program application requires the support and involvement of the student's supervisor at the home university. The graduate program committee at the home university decides whether or not to recommend the student for admission to the GDDP. A recommended individual's application will then be forwarded to the other partner university. Applicants must meet the admission requirements of that partner university.

Program Withdrawal

A student may withdraw from the GDDP master's program by transferring to the master's program at their home university at any time. The full academic record at the partner university may be used to determine standing at the home university. A student may withdraw by transferring to the master's program of the partner university only with permission of the graduate program committee of the partner university, considering the full records at both universities.

Time Limits

Under normal circumstances, the time limit to complete this program is within three calendar years, and no longer than six calendar years.

Supervisory Committee

Each student will be supervised by a supervisory committee consisting of a senior supervisor from either university and at least one faculty member from the other university.

Program Requirements

Simon Fraser University students complete a total of at least 23 units. ZJU students complete a total of at least 26 units.

From the list of courses approved for this program, at least nine units must be from Simon Fraser University and at least 10 units must be from Zhejiang University. All students complete at least one of

CMPT 705 - Design and Analysis of Algorithms (3)

CMPT 710 - Computational Complexity (3)

2122001-2 Elements of the Theory of Computation (ZJU course)

To fulfil the program's breadth requirements, all students complete at least one course (of two or more units) from each of the four course groupings in Table 1 below. SFU students at Zhejiang University complete, in addition, the China Survey course. ZJU students complete courses 2122016 and 2124046. ZJU students complete at least an additional six units of social science courses as specified by Zhejiang University.

Table 1

GROUP I: ALGORITHMS AND THEORY CREDITS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 701 - Computability and Logic (3)

CMPT 705 - Design and Analysis of Algorithms (3)

CMPT 710 - Computational Complexity (3)

CMPT 711 - Bioinformatics Algorithms (3)

CMPT 813 - Computational Geometry (3)

CMPT 814 - Algorithmic Graph Theory (3)

CMPT 815 - Algorithms of Optimization (3)

CMPT 881 - Special Topics in Theoretical Computing Science (3)

COURSES AT ZHEJIANG UNIVERSITY

2122001-2 Elements of the Theory of Computation

2122019-2 Advanced Formal Method

GROUP II: SYSTEMS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 745 - Software Engineering (3)

CMPT 771 - Internet Architecture and Protocols (3)

CMPT 777 - Formal Verification (3)

CMPT 816 - Theory of Communication Networks (3)

CMPT 885 - Special Topics in Computer Architecture (3)

CMPT 886 - Special Topics in Operating Systems (3)

COURSES AT ZHEJIANG UNIVERSITY

2122002-2 Advanced Operating System
2122003-2 Advanced Computer Architecture
2122016-2 System Design and Analysis
2124012-2 Grid Computing and Distributed Systems
2124016-2 Embedded Systems
2124028-2 Pervasive Computing
2124045-2 Network and Information Security
2124059-2 Multi-core Computing
2124070-2 Parallel Computer Architecture and Programming
2124072-2 Principles of Embedded System Design

GROUP III: APPLICATIONS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 721 - Knowledge Representation and Reasoning (3)
CMPT 726 - Machine Learning (3)
CMPT 740 - Database Systems (3)
CMPT 741 - Data Mining (3)
CMPT 764 - Geometric Modelling in Computer Graphics (3)
CMPT 767 - Visualization (3)
CMPT 820 - Multimedia Systems (3)
CMPT 822 - Computational Vision (3)
CMPT 823 - Formal Topics - Knowledge Representation (3)
CMPT 825 - Natural Language Processing (3)
CMPT 827 - Intelligent Systems (3)
CMPT 829 - Special Topics in Bioinformatics (3)
CMPT 843 - Database and Knowledge-base Systems (3)
CMPT 882 - Special Topics in Artificial Intelligence (3)
CMPT 888 - Special Topics in Computer Graphics, HCI, Vision and Visualization (3)

COURSES AT ZHEJIANG UNIVERSITY

2122020-4 Computer Graphics
2122021-2 Introduction to Computer Vision
2122022-2 Advanced Database Technology
2122023-2 Introduction to Artificial Intelligence
2124003-2 Computer Security
2124014-2 Advanced Software Engineering
2124017-2 The Fundamental Principles of Non-Photorealistic Computer Graphics
2124025-2 Electronic Business Technology

2124027-2 Computer Animation and its Application

2124044-2 Webservice Technology

2124057-2 High End Computing and Its Applications

2124060-2 Multimedia Computing

2124061-2 Network Multimedia Search Engine

2124062-2 Solid Modeling

2124063-2 Biologic Intelligence and Algorithm

2124064-2 Introduction to Machine Learning

2124065-2 Advanced Artificial Intelligence

2124066-2 Visualization in Scientific Computing

2124067-2 Speech and Language, Processing and Understanding

2124068-2 Image Processing and Modeling

2124069-2 Sensor Networks and Information Processing

2124073-2 Virtual Reality

2124074-2 HCI and Virtual Human

2124075-2 Data Mining

2124076-2 Services Computing

GROUP IV: OTHERS

COURSES AT SIMON FRASER UNIVERSITY

COURSES AT ZHEJIANG UNIVERSITY

0711026-2 Bioinformatics Topics

2122014-2 Software Engineering Process Management

2124040-2 Software Engineering and Business English

2124041-2 Software Quality Assurance

2124042-2 Software Requirement Engineering

2124043-2 Software Engineering Case Analysis

2124046-2 Software Engineering Project Management

A Simon Fraser University course and a Zhejiang University course are deemed to be similar if the two courses overlap substantially. Students with credit for one of two similar courses may not complete the other course for further credit. Simon Fraser University's graduate program breadth committee and the corresponding Zhejiang University committee will decide on the list of similar courses.

Extended Essay Requirement

All students will complete two extended essays, one at each university. Consult the school website for current information.

Practicum Requirement

Students are required to complete a one-term co-operative education practicum or research/industry project at either Simon Fraser University or Zhejiang University.

Tuition Fees

When a student is resident at Simon Fraser University, the student pays per-unit tuition fees to Simon Fraser University. When a student is resident at Zhejiang University, the student pay tuition fees to Zhejiang University.

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Computing Science Dual Degree

MASTER OF SCIENCE

Description of Program

Students in this graduate dual degree program (GDDP), jointly developed by Simon Fraser University and Zhejiang University (ZJU), China, will acquire two graduate degrees. Graduates will receive a master of science (MSc) degree from Simon Fraser University, and a master of software engineering (MSE) degree from Zhejiang University. Students will study and conduct research at both universities.

The language of instruction at Simon Fraser University is English, while at Zhejiang University it is either English and/or Chinese.

Admission Requirements

Students must be admitted to one university, and then apply and be admitted to the other university.

To qualify for admission, students must satisfy the usual admission requirements as specified by each university. At SFU the admission requirements are stated in Graduate General Regulations 1.3 in the SFU Calendar. The university the student is first admitted to will be referred to as the student's 'home' university. Students whose home university is Simon Fraser University are called SFU students while those whose home university is Zhejiang are called ZJU students.

Once admitted to the home university, the student may then apply for admission to the graduate dual degree program normally within 12 months of the date of admission to the home university graduate program. The program application requires the support and involvement of the student's supervisor at the home university. The graduate program committee at the home university decides whether to recommend the student for admission to the GDDP. A recommended individual's application will then be forwarded to the other partner university. Applicants must meet the admission requirements of that partner university.

Program Requirements

This program consists of course work at both SFU and ZJU, a one term co-op practicum or research/industry project at either SFU or ZJU, and two extended essays (one at each university). Simon Fraser University students complete a minimum of 23 course units from both institutions. ZJU students complete a minimum of 24 course units from both institutions. All students complete at least 15 units of course, practicum/project and extended essay at SFU.

All students complete one of
CMPT 705 - Design and Analysis of Algorithms (3)
CMPT 710 - Computational Complexity (3)
2122001-2 Elements of the Theory of Computation (ZJU course)

and four courses from Table 1

To fulfil the program's breadth requirements, all students complete at least one course from each of the four course groupings in Table 1 below. SFU students at Zhejiang University also complete the China Survey course. ZJU students complete an additional three units of social science courses as specified by Zhejiang University.

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and a co-op, or internship, or research/industry project at SFU or ZJU
CMPT 626 - Graduate Co-op Practicum I (3)
CMPT 631 - Industrial Internship (3)

and two extended essays (one at each university)
CMPT 895 - Master Program Extended Essay (3)

NOTE: A Simon Fraser University course and a Zhejiang University course are deemed similar if the two courses overlap substantially. Students with credit for one of two similar courses may not complete the other course for further credit. Simon Fraser University's graduate program breadth committee and the corresponding Zhejiang University committee will decide on the list of similar courses.

Table 1

**GROUP I - ALGORITHMS AND THEORY CREDITS
COURSES AT SIMON FRASER UNIVERSITY**

CMPT 701 - Computability and Logic (3)
CMPT 705 - Design and Analysis of Algorithms (3)
CMPT 710 - Computational Complexity (3)
CMPT 711 - Bioinformatics Algorithms (3)
CMPT 712 - Approximation and Randomized Algorithms (3)
CMPT 813 - Computational Geometry (3)
CMPT 814 - Algorithmic Graph Theory (3)
CMPT 815 - Algorithms of Optimization (3)
CMPT 981 - Special Topics in Theoretical Computing Science (3)

COURSES AT ZHEJIANG UNIVERSITY

2122001-2 Elements of the Theory of Computation
2122019-2 Advanced Formal Method
2124028-2 Pervasive Computing

GROUP II: SYSTEMS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 745 - Software Engineering (3)
CMPT 770 - Parallel and Distributed Computing (3)
CMPT 771 - Computer Networks (3)
CMPT 777 - Formal Verification (3)
CMPT 816 - Theory of Communication Networks (3)
CMPT 982 - Special Topics in Networks and Systems (3)
CMPT 886 - Special Topics in Operating Systems (3)

COURSES AT ZHEJIANG UNIVERSITY

2122002-2 Advanced Operating System
2122003-2 Advanced Computer Architecture
2124012-2 Grid Computing and Distributed Systems
2124045-2 Network and Information Security
2124059-2 Multi-core Computing
2124070-2 Parallel Computer Architecture and Programming
5121009-2 Fundamental of Financial Information System
5141010-3 Embedded System Design
5141061-2 System Analysis and Design

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5141069-2 Embedded Operating Systems
5143078-2 Object-Oriented System Analysis and Design

GROUP III - APPLICATIONS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 720 - Robotic Autonomy: Algorithms and Computations (3)
CMPT 721 - Knowledge Representation and Reasoning (3)
CMPT 726 - Machine Learning (3)

CMPT 728 - Deep Learning (3)
CMPT 740 - Database Systems (3)
CMPT 741 - Data Mining (3)
CMPT 762 - Computer Vision (3)
CMPT 763 - Biomedical Computer Vision (3)
CMPT 764 - Geometric Modelling in Computer Graphics (3)
CMPT 766 - Computer Animation and Simulation (3)
CMPT 767 - Visualization (3)
CMPT 820 - Multimedia Systems (3)
CMPT 822 - Computational Vision (3)
CMPT 823 - Formal Topics - Knowledge Representation (3)
CMPT 825 - Natural Language Processing (3)
CMPT 827 - Intelligent Systems (3)
CMPT 829 - Special Topics in Bioinformatics (3)
CMPT 843 Database and Knowledge-Base Systems (3)
CMPT 983 - Special Topics in Artificial Intelligence (3)
CMPT 985 - Special Topics in Graphics, HCI, Visualization, Vision, Visualization Multimedia (3)

COURSES AT ZHEJIANG UNIVERSITY

2122020-4 Computer Graphics
2122021-2 Introduction to Computer Vision
2122023-2 Introduction to Artificial Intelligence
2124003-2 Computer Security
2124014-2 Advanced Software Engineering
2124017-2 The Fundamental Principles of Non-Photorealistic Computer Graphics
2124044-2 Webservice Technology
2124057-2 High End Computing and Its Applications
2124060-2 Multimedia Computing
2124061-2 Network Multimedia Search Engine
2124062-2 Solid Modeling
2124063-2 Biologic Intelligence and Algorithm
2124064-2 Introduction to Machine Learning
2124065-2 Advanced Artificial Intelligence
2124066-2 Visualization in Scientific Computing
2124067-2 Speech and Language, Processing and Understanding
2124068-2 Image Processing and Modeling
2124076-2 Services Computing
5141005-2 Advanced Object-oriented Development Techniques
5141039-2 Advanced IoT Application
5141062-2 Advanced Data Base Technology
5141066-3 Big Data Storage and Processing

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5143068-2 3D Animation and HCI
5143081-3 Key Technologies for Game Development
5143088-2 Stream Data Processing and Analyzing

GROUP IV - OTHER

COURSES AT SIMON FRASER UNIVERSITY

CMPT 816 - Theory of Communication Networks (3)

COURSES AT ZHEJIANG UNIVERSITY

0711026-2 Bioinformatics Topics

5109001-2 Development of Professional Competency and Entrepreneurial Education

5121001-2 Software Project Management

5141060-2 Project Practice

5143016-3 Quality Assurance of Software and Testing Technology

Program Length

Students are expected to complete the program requirements in three years.

Other Information

Supervisory Committee

Each student will be supervised by a supervisory committee consisting of a senior supervisor from either university and at least one faculty member from the other university. Each student is required to have an annual progress evaluation by the supervisory committee. Meetings of the supervisory committee are normally once per year and may involve the use of new media.

Program Withdrawal

A student may withdraw from the GDDP program by transferring to the MSc program at either the home or partner university at any time. The full academic record at both universities may be considered to determine standing at the home university.

Extended Essays

Extended essay completed at SFU is examined by two readers and is not required to be submitted to the library upon completion.

Tuition Fees

When a student is resident at Simon Fraser University, the student pays per-unit tuition fees to Simon Fraser University. When a student is resident at Zhejiang University, the student pays tuition fees to Zhejiang University.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

School of Computing Science | Faculty of Applied Sciences
Simon Fraser University Calendar | Summer 2019

Computing Science Dual Degree

DOCTOR OF PHILOSOPHY

Students in this graduate dual degree program (GDDP), jointly developed by Simon Fraser University and Zhejiang University (ZJU), China, will acquire two graduate degrees. Graduates will receive a doctor of philosophy (PhD) degree from Simon Fraser University, and a second doctor of philosophy (PhD) degree from Zhejiang University. Students will study and conduct research at both universities.

The language of instruction at Simon Fraser University is English, while at Zhejiang University, it is either English and/or Chinese.

Admission Requirements

Students must be admitted to one university, and then apply and be admitted to the other university.

To qualify for admission, students must satisfy the usual admission requirements as specified by each university. The university of first admission will be referred to as the student's 'home' university. Students whose home university is Simon Fraser University are called SFU students while those whose home university is Zhejiang are called ZJU students.

Once admitted to the home university, the student may then apply for admission to the graduate dual degree program, normally within 18 months of admission to their home university graduate program. The program application requires the support and involvement of the student's supervisor at the home university. The graduate program committee at the home university decides whether or not to recommend the student for admission to the GDDP. A recommended individual's application will then be forwarded to the other 'partner' university. Applicants must meet the admission requirements of that partner university.

Program Withdrawal

A student may withdraw from this dual degree program at any time to become a doctoral student at the home university. The full academic record at the partner university may be used to determine standing at the home university. A student may withdraw by transferring to the PhD program of the partner university only with the permission of the graduate program committee of the partner university, considering the full academic records at both universities.

Time Limits

Under normal circumstances, the time limit to complete this program is within six years for students entering with a bachelor of science (BSc) degree, and within four years for a student entering with a master of science degree (MSc) in computing science or equivalent. The maximum time to complete the degree is eight calendar years.

Supervisory Committee

Each student will be supervised by a supervisory committee consisting of a senior supervisor and another faculty member at the home university, and a co-senior supervisor and another faculty member at the partner university. Each student is required to have an annual progress evaluation by the supervisory committee. Meetings of the supervisory committee are normally once per year and may involve the use of new media.

Program Requirements

All students will demonstrate a breadth of learning in computing science by completing at least one of

CMPT 705 - Design and Analysis of Algorithms (3)

CMPT 710 - Computational Complexity (3)

2122001-2 Elements of the Theory of Computation (ZJU course)

Additional requirements vary for students without or with a master of science degree.

SFU students without an MSc in computing science or an equivalent must complete at least 12 units at each university. Of those units, at least nine from each university must be chosen from the courses listed in groups I, II, and III. At Zhejiang University, the approval of the student's supervisor and the Zhejiang University graduate program director are required for the student to complete courses that are not listed in groups I, II, and III.

SFU students with an MSc in computing science or an equivalent must complete at least six units at each university from the courses listed in groups I, II, and III.

ZJU students without an MSc in computing science or an equivalent must complete at least 12 units at Simon Fraser University and at least 14 units at Zhejiang University. Of those units, all but three from Simon Fraser University must be chosen from the courses listed in groups I, II, and III. At Zhejiang University, these students must complete courses 2111001, 2111002, 2112001, and at least four additional Zhejiang University courses in groups I, II, and III.

ZJU students with an MSc in computing science or an equivalent must complete at least six units at each university from the courses listed in groups I, II, and III. At Zhejiang University, these students must complete courses 2111001, 2111002, 2112001.

All students must complete at least one course in each of the groups and at least one of these courses must be chosen from CMPT 705, CMPT 710, and 2122001. At most two special topics courses at Simon Fraser University (two of CMPT 829, 881, 882, 885, 886, 888) may be used to meet the breadth requirement, except with permission from the graduate program director at Simon Fraser University.

All Zhejiang University students must complete additional research seminars as specified by Zhejiang University.

In special circumstances, with the approval of the student's supervisors and the graduate program director at the partner (home) university, up to three of the units at the partner (home) university may be completed at the home (partner) university.

A Simon Fraser University course and a Zhejiang University course are deemed to be similar if the two courses overlap substantially. Students with credit for one of two similar courses may not complete the other course for further credit. Simon Fraser University's graduate program breadth committee and the corresponding Zhejiang University committee will decide on the list of similar courses.

At most, two of the following Simon Fraser University special topics courses may be completed to fulfill the breadth requirement, except with permission from Simon Fraser University's graduate program director.

CMPT 829 - Special Topics in Bioinformatics (3)

CMPT 881 - Special Topics in Theoretical Computing Science (3)

CMPT 882 - Special Topics in Artificial Intelligence (3)

CMPT 885 - Special Topics in Computer Architecture (3)

CMPT 886 - Special Topics in Operating Systems (3)

CMPT 888 - Special Topics in Computer Graphics, HCI, Vision and Visualization (3)

For more information about breadth requirements, please visit the GDDP website.

Research

Simon Fraser University's School of Computing Science requires students to complete all of the following depth requirements.

present a depth seminar and examination

write a thesis proposal and present a seminar and defend the material

submit a written thesis proposal and defend that thesis based on independent original work

All requirements may be completed at either university. Additional requirements concerning the thesis are found at the dean of graduate studies website.

For more information about the thesis defense, see 1.9 and 1.10 of Simon Fraser University's graduate general regulations.

Residency Requirement

Students are expected to conduct research at both Simon Fraser University and Zhejiang University, and to reside at each university for at least one year.

Tuition Fees

Students who are resident at Simon Fraser University pay per term tuition fees. Students who are resident at Zhejiang University pay per year tuition fees.

Table 2

GROUP 1: ALGORITHMS AND THEORY CREDITS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 701 - Computability and Logic (3)

CMPT 705 - Design and Analysis of Algorithms (3)

CMPT 710 - Computational Complexity (3)

CMPT 711 - Bioinformatics Algorithms (3)

CMPT 813 - Computational Geometry (3)

CMPT 814 - Algorithmic Graph Theory (3)

CMPT 815 - Algorithms of Optimization (3)

CMPT 881 - Special Topics in Theoretical Computing Science (3)

COURSES AT ZHEJIANG UNIVERSITY

2111001-2 Applied Mathematics for Computer Science (1)

2111002-2 Applied Mathematics for Computer Science (2)

2122001-2 Elements of the Theory of Computation

2122019-2 Advanced Formal Methods

GROUP II: SYSTEMS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 745 - Software Engineering (3)

CMPT 771 - Internet Architecture and Protocols (3)

CMPT 777 - Formal Verification (3)

CMPT 816 - Theory of Communication Networks (3)

CMPT 885 - Special Topics in Computer Architecture (3)

CMPT 886 - Special Topics in Operating Systems (3)

COURSES AT ZHEJIANG UNIVERSITY

2122002-2 Advanced Operating System

2122003-2 Advanced Computer Architecture

2122006-2 Modern VLSI Design: System on Chip Design

2122018-2 Advanced Computer Networks

2124003-2 Computer Security

2124012-2 Grid Computing and Distributed Systems

2124014-2 Advanced Software Engineering

2124028-2 Pervasive Computing

2124057-2 High End Computing and Its Applications

2124058-2 Advanced Topics in Compilers

2124059-2 Multi-core Computing

2124060-2 Network Multimedia Computing

2124072-2 Principles of Embedded System Design

2124069-2 Sensor Network and Information Processing

2124070-2 Parallel Computer Architecture and Programming

2124071-2 Network Algorithms

GROUP III: APPLICATIONS

COURSES AT SIMON FRASER UNIVERSITY

CMPT 721 - Knowledge Representation and Reasoning (3)

CMPT 726 - Machine Learning (3)

CMPT 740 - Database Systems (3)
CMPT 741 - Data Mining (3)
CMPT 764 - Geometric Modelling in Computer Graphics (3)
CMPT 767 - Visualization (3)
CMPT 820 - Multimedia Systems (3)
CMPT 822 - Computational Vision (3)
CMPT 823 - Formal Topics - Knowledge Representation (3)
CMPT 825 - Natural Language Processing (3)
CMPT 827 - Intelligent Systems (3)
CMPT 829 - Special Topics in Bioinformatics (3)
CMPT 843 - Database and Knowledge-base Systems (3)
CMPT 882 - Special Topics in Artificial Intelligence (3)
CMPT 888 - Special Topics in Computer Graphics, HCI, Vision and Visualization (3)

COURSES AT ZHEJIANG UNIVERSITY

0711026-2 Bioinformatics Topics
2112001-2 Research Frontiers of Computer Science and Technology
2122020-4 Computer Graphics
2122021-2 Introduction to Computer Vision
2122022-2 Advanced Database Technology
2122023-2 Introduction to Artificial Intelligence
2124017-2 The Fundamental Principles of Non-Photorealistic Computer Graphics
2124025-2 Electronic Business Technology
2124027-2 Computer Animation and its Application
2124061-2 Network Multimedia Search Engine
2124062-2 Solid Modeling
2124063-2 Biologic Intelligence and Algorithm
2124064-2 Introduction to Machine Learning
2124065-2 Advanced Artificial Intelligence
2124066-2 Visualization in Scientific Computing
2124067-2 Speech and Language, Processing and Understanding
2124068-2 Image Processing and Modeling
2124073-2 Virtual Reality
2124074-2 HCI and Virtual Human
2124075-2 Data Mining

REVISED
CALENDAR ENTRY

Computing Science Dual Degree

DOCTOR OF PHILOSOPHY

Description of Program

Students in this graduate dual degree program (GDDP), jointly developed by Simon Fraser University and Zhejiang University (ZJU), China, will acquire two graduate degrees. Graduates will receive a doctor of philosophy (PhD) degree from Simon Fraser University, and a second doctor of philosophy (PhD) degree from Zhejiang University. Students will study and conduct research at both universities.

The language of instruction at Simon Fraser University is English, while at Zhejiang University, it is either English and/or Chinese.

Admission Requirements

Students must be admitted to one university, and then apply and be admitted to the other university.

To qualify for admission, students must satisfy the usual admission requirements as specified by each university. At SFU, the admission requirements are stated in Graduate General Regulations 1.3 in the SFU Calendar. The university the student is first admitted to will be referred to as the student's 'home' university.

Once admitted to the home university, the student may then apply for admission to the graduate dual degree program, normally within 18 months of admission to their home university graduate program. The program application requires the support and involvement of the student's supervisor at the home university. The graduate program committee at the home university decides whether to recommend the student for admission to the GDDP. A recommended individual's application will then be forwarded to the other 'partner' university. Applicants must meet the admission requirements of that partner university.

Program Requirements

SFU students with an MSc in Computing Science or an equivalent must complete at least six units at each university from the courses listed in groups I, II, and III. Please see requirements for the students without the MSc in Computing Science or an equivalent in Other Information.

This program consists of course work, depth requirements, and a thesis.

All students complete one of
CMPT 705 - Design and Analysis of Algorithms (3)
CMPT 710 - Computational Complexity (3)
2122001-2 Elements of the Theory of Computation (ZJU course)

and one course from group II

and one course from group III

and a thesis
CMPT 899 - PhD Thesis (6)

NOTE: A Simon Fraser University course and a Zhejiang University course are deemed similar if the two courses overlap substantially. Students with credit for one of two similar courses may not complete the other

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course for further credit. Simon Fraser University's graduate program breadth committee and the corresponding Zhejiang University committee will decide on the list of similar courses.

Courses

GROUP I – ALGORITHMS AND THEORY CREDITS

COURSES AT SIMON FRASER UNIVERSITY

- CMPT 701 - Computability and Logic (3)
- CMPT 705 - Design and Analysis of Algorithms (3)
- CMPT 710 - Computational Complexity (3)
- CMPT 711 - Bioinformatics Algorithms (3)
- CMPT 712 - Approximation and Randomized Algorithms (3)
- CMPT 813 - Computational Geometry (3)
- CMPT 814 - Algorithmic Graph Theory (3)
- CMPT 815 - Algorithms of Optimization (3)
- CMPT 981 - Special Topics in Theoretical Computing Science (3)

COURSES AT ZHEJIANG UNIVERSITY

- 2111001-2 Applied Mathematics for Computer Science (1)
- 2111002-2 Applied Mathematics for Computer Science (2)
- 2122001-2 Elements of the Theory of Computation
- 2122019-2 Advanced Formal Methods

GROUP II: SYSTEMS

COURSES AT SIMON FRASER UNIVERSITY

- CMPT 745 - Software Engineering (3)
- CMPT 770 - Parallel and Distributed Computing (3)
- CMPT 771 - Computer Networks (3)
- CMPT 777 - Formal Verification (3)
- CMPT 816 - Theory of Communication Networks (3)
- CMPT 982 - Special Topics in Networks and Systems (3)
- CMPT 886 - Special Topics in Operating Systems (3)

COURSES AT ZHEJIANG UNIVERSITY

- 2122002-2 Advanced Operating System
- 2122003-2 Advanced Computer Architecture
- 2122006-2 Modern VLSI Design: System on Chip Design
- 2122018-2 Advanced Computer Networks
- 2124003-2 Computer Security
- 2124012-2 Grid Computing and Distributed Systems
- 2124014-2 Advanced Software Engineering
- 2124028-2 Pervasive Computing
- 2124057-2 High End Computing and Its Applications
- 2124058-2 Advanced Topics in Compilers
- 2124059-2 Multi-core Computing
- 2124060-2 Network Multimedia Computing
- 2124072-2 Principles of Embedded System Design
- 2124069-2 Sensor Network and Information Processing
- 2124070-2 Parallel Computer Architecture and Programming
- 2124071-2 Network Algorithms

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GROUP III - APPLICATIONS

COURSES AT SIMON FRASER UNIVERSITY

- CMPT 720 - Robotic Autonomy: Algorithms and Computations (3)
- CMPT 721 - Knowledge Representation and Reasoning (3)
- CMPT 726 - Machine Learning (3)
- CMPT 727 - Statistical Machine Learning (3)
- CMPT 728 - Deep Learning (3)
- CMPT 740 - Database Systems (3)
- CMPT 741 - Data Mining (3)
- CMPT 762 - Computer Vision (3)
- CMPT 763 - Biomedical Computer Vision (3)
- CMPT 764 - Geometric Modelling in Computer Graphics (3)
- CMPT 766 - Computer Animation and Simulation (3)
- CMPT 767 - Visualization (3)
- CMPT 820 - Multimedia Systems (3)
- CMPT 822 - Computational Vision (3)
- CMPT 823 - Formal Topics - Knowledge Representation (3)
- CMPT 825 - Natural Language Processing (3)
- CMPT 827 - Intelligent Systems (3)
- CMPT 829 - Special Topics in Bioinformatics (3)
- CMPT 843 Database and Knowledge-Base Systems (3)
- CMPT 983 - Special Topics in Artificial Intelligence (3)
- CMPT 985 - Special Topics in Graphics, HCI, Visualization, Vision, Visualization Multimedia (3)

COURSES AT ZHEJIANG UNIVERSITY

- 0711026-2 Bioinformatics Topics
- 2112001-2 Research Frontiers of Computer Science and Technology
- 2122020-4 Computer Graphics
- 2122021-2 Introduction to Computer Vision
- 2122022-2 Advanced Database Technology
- 2122023-2 Introduction to Artificial Intelligence
- 2124017-2 The Fundamental Principles of Non-Photorealistic Computer Graphics
- 2124025-2 Electronic Business Technology
- 2124027-2 Computer Animation and its Application
- 2124061-2 Network Multimedia Search Engine
- 2124062-2 Solid Modeling
- 2124063-2 Biologic Intelligence and Algorithm
- 2124064-2 Introduction to Machine Learning
- 2124065-2 Advanced Artificial Intelligence
- 2124066-2 Visualization in Scientific Computing
- 2124067-2 Speech and Language, Processing and Understanding
- 2124068-2 Image Processing and Modeling
- 2124073-2 Virtual Reality
- 2124074-2 HCI and Virtual Human
- 2124075-2 Data Mining

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Program Length

Students entering with a master of science degree (MSc) in computing science, or equivalent, are expected to complete the program requirements in four years. Students entering with a bachelor of science degree (BSc) are expected to complete the program requirements in six years.

Other Information

Course Work for Simon Fraser University Students

SFU students without an MSc in computing science, or an equivalent, must complete at least 12 units at each university. Of those units, at least nine from each university must be chosen from the courses listed in groups I, II, and III. At Zhejiang University, the approval of the student's supervisor and the Zhejiang University graduate program director are required for the student to complete courses that are not listed in groups I, II, and III.

SFU students with an MSc in computing science or an equivalent must complete at least six units at each university from the courses listed in groups I, II, and III.

With the approval of the student's supervisors and the graduate program director at the partner (home) university, up to three of the units at the partner (home) university may be completed at the home (partner) university.

Course Work for Zhejiang University Students

ZJU students without an MSc in computing science or an equivalent must complete at least 12 units at Simon Fraser University and at least 14 units at Zhejiang University. Of those units, all but three from Simon Fraser University must be chosen from the courses listed in groups I, II, and III.

ZJU students with an MSc in computing science or an equivalent must complete at least six units at each university from the courses listed in groups I, II, and III.

Depth Requirement

Simon Fraser University's School of Computing Science requires students to complete all of the following depth requirements:

- present a depth seminar and examination
- write a thesis proposal and present a seminar and defend the material
- submit a written thesis proposal and defend that thesis based on independent original work

All requirements may be completed at either university. Additional requirements concerning the thesis are found at the graduate and postdoctoral studies website. For more information about the thesis defence, see 1.9 and 1.10 of Simon Fraser University's graduate general regulations.

Breadth Requirement

At most two special topics courses at Simon Fraser University may be used to meet the breadth requirement, except with permission from the graduate program director at Simon Fraser University. For more information about breadth requirements, please visit the GDDP website.

Supervisory Committee

Each student will be supervised by a supervisory committee consisting of a supervisor and another faculty member at the home university, and a co-supervisor and another faculty member at the partner university.

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Each student is required to have an annual progress evaluation by the supervisory committee. Meetings of the supervisory committee are normally once per year and may involve the use of new media.

Program Withdrawal

Student may withdraw from the GDDP program by transferring to the PhD program at the home or partner university at any time. The full academic record at the partner university may be used to determine standing at the home university

Residency Requirement

Students are expected to conduct research at both Simon Fraser University and Zhejiang University, and to reside at each university for at least one year.

Tuition Fees

Students who are resident at Simon Fraser University pay per term tuition fees. Students who are resident at Zhejiang University pay per year tuition fees.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



SIMON FRASER UNIVERSITY
SURREY

SCHOOL OF MECHATRONIC SYSTEMS ENGINEERING

May 27, 2019

250-13450 102 Avenue
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Canada

Tel: 778-782-8456
Fax: 778-782-7514

Memorandum

From: Dr. Mehrdad Moallem, MSE Graduate Program Committee Chair

A handwritten signature in black ink, appearing to read 'M. Moallem'.

To: Dr. Parvaneh Saeedi, Associate Dean, Faculty of Applied Sciences

Attached please find calendar revisions for Mechatronic Systems Engineering Doctor of Philosophy (PhD) and Mechatronic Systems Engineering Master of Applied Science (MASc) for the degree audit project. Please approve these two items for the Spring 2020 effective term.



SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

STUDENT SERVICES
Summer Calendar

Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

School of Mechatronic Systems Engineering | Faculty of Applied Sciences
Simon Fraser University Calendar | Summer 2019

Mechatronic Systems Engineering

MASTER OF APPLIED SCIENCE

The master of applied science (MASc) is a fulltime program with primary emphasis on thesis work.

Admission Requirements

The normal admission requirement is a bachelor's degree in mechanical engineering, electrical engineering, mechatronics engineering or a related field, with a 3.0 cumulative grade point average (CGPA) (B grade) from a recognized university, or equivalent in accord with SFU Graduate General Regulation 1.3.3.

Course Requirements

Students complete a total of 30 units consisting of a minimum of 12 units of courses, and a thesis equal to 18 units. The courses will normally be selected, in consultation with the senior supervisor. At least six units must be mechatronic systems engineering graduate courses. At most, three units may be directed studies.

Additional courses may be required to correct deficiencies in the student's background.

If the subject matter of a required course has been previously completed with graduate credit, the course may not be completed again for credit.

Thesis

The thesis is based on an independent project with a significant research component. The student defends the thesis in an exam, in accordance with regulations. See Graduate General Regulations for more requirements.

Graduate Co-op Education

Students in the MASc program may complete an optional one-term co-op practicum (MSE 793) of paid practical experience in an appropriate industrial setting, and complement their academic studies. The practicum will appear on the student's transcript, but does not count towards the student's CGPA and course requirements for the degree. Students require a pre-approval from both the

senior supervisor and Graduate Program Chair in order to apply for the practicum. Arrangements for the practicum are made through the School's co-op coordinators and SFU Co-operative Education office.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

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Mechatronic Systems Engineering

MASTER OF APPLIED SCIENCE

Description of Program

The master of applied science (MAsc) is a full-time program to pursue advanced studies in the area of Mechatronics. The primary component of the program is the thesis, which reports the results of an independent research investigation or creative design carried out by the student. Candidates must have strong aptitude for research, including strong analytical and practical problem solving skills in multidisciplinary areas including mechanical, electrical, and systems engineering.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar and hold a bachelor's degree or equivalent in mechanical engineering, electrical engineering, mechatronic engineering, or a related field

Program Requirements

This program consists of course work and a thesis for a minimum of 30 units. The courses will normally be selected in consultation with the student's supervisor. At most, three units may be directed studies. Additional courses may be required to correct deficiencies in the student's background. If the subject matter of a required course has been previously completed with graduate credit, the course may not be completed again for credit.

Students must complete

two MSE graduate courses selected in consultation with their supervisor

and two graduate courses from FAS or SCI

and a thesis

MSE 898 - MAsc Thesis (18)

Program Length

Students are expected to complete the program requirements in 6 terms.

Other Information

Thesis

The thesis is based on an independent project with a significant research component. The student defends the thesis, in accordance with regulations. See the Graduate General Regulations for more requirements.

Optional Industrial Internship

Students in the MAsc program may complete an optional internship course of paid practical experience in an appropriate industrial setting to complement their academic studies. The internship will appear on the student's transcript, but does not count towards the student's CGPA and course requirements for the degree. Students require a pre-approval from both their supervisor and the graduate program chair in order to apply for the internship.

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Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

School of Mechatronic Systems Engineering | Faculty of Applied Sciences
Simon Fraser University Calendar | Summer 2019

Mechatronic Systems Engineering

DOCTOR OF PHILOSOPHY

Admission Requirements

For admission to the doctor of philosophy (PhD) program, a student must have a master's degree in mechanical engineering, electrical engineering, mechatronics engineering or a related field, have submitted evidence of capability to undertake substantial original research. See graduate general regulation 1.3 for other PhD program admission requirements.

Residence Requirement

Students will conform to the residence requirements stipulated in graduate general regulation 1.7.

Course Requirements

The minimum course requirements are as follows:

MSE 801 (or ENSC 803)

Two graduate MSE courses (not directed studies)

Two graduate technical courses (at most one course may be directed studies MSE 891/892)

Students may take additional courses to correct any deficiencies in their background upon approval of their senior supervisors.

Transfer from the Master's Program to the PhD Program

Proceeding to a Ph.D. program without completing a Master's degree is discouraged. However, a student may be admitted when all of the following conditions have been met:

The application for a transfer is submitted within the first six terms of the MASC program at SFU

All the MASC coursework requirements have been completed with a CGPA of 3.67/4.33 or better

A recommendation by the senior supervisor indicates demonstrated potential for outstanding research

The student's supervisory committee and the graduate program committee approve

Once transferred into the Ph.D. program, the additional course requirements are as follows:

MSE 801 (or ENSC 803)

Two graduate MSE courses (at most one directed studies course can be taken during the combined Master's/Ph.D. period)

Previous Credit

If the subject matter of a listed course has been previously completed with graduate credit, the course may not be completed again for credit.

Qualifying Examination

To qualify the student will submit a brief written research proposal and defend it orally to his/her supervisory committee within the first 24 months of admission. The proposal's defence will be judged according to the feasibility and scientific merits of the proposed research, and demonstration of a sophisticated understanding of general material in the student's major area of research. This level of understanding is associated with senior undergraduate and first year graduate course material.

The possible outcomes of the qualifying examination are 'pass,' 'marginal' and 'fail.' A student with 'marginal' will be required to resubmit the research proposal and defend it for the second and final time within six months and/or to complete more courses. A 'failing' grade requires withdrawal.

Thesis

Students define and undertake original research, the results of which are reported in a thesis. An examining committee is formed as defined in graduate general regulation 1.9.3. Students conform to residence requirements (see graduate general regulation 1.7.3). The senior supervisor will be Mechatronic Systems Engineering faculty approved by the graduate program committee.

The student's progress will be reviewed every 12 months by a supervisory committee of three or more faculty members. At each annual review, the student presents a summary of his/her work to date, with the second review normally being the research proposal defence described in the section for Qualifying Examination (see above). Students not making satisfactory progress in their research topics, or failing to demonstrate satisfactory knowledge and understanding of recent publications in their general area of research, or failing to have their revised research proposal approved by the supervisory committee within 24 months of admission, may be required to withdraw as per section 1.8.2 Review of Unsatisfactory Progress of the graduate general regulations.

Graduate Co-operative Education

Students in the PhD program may complete an optional one-term co-op practicum (MSE 793) of paid practical experience in an appropriate industrial setting, and complement their academic studies. The practicum will appear on the student's transcript, but does not count towards the student's CGPA and course requirements for the degree. Students require a pre-approval from both the senior supervisor and Graduate Program Chair in order to apply for the practicum. Arrangements for the practicum are made through the School's co-op coordinators and SFU Co-operative Education office.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

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CALENDAR ENTRY

Mechatronic Systems Engineering

DOCTOR OF PHILOSOPHY

Description of Program

The Doctor of Philosophy (PhD) in the School of Mechatronic Systems Engineering is a program intended for those who wish to develop advanced independent research skills. Candidates with strong aptitude for research and exceptional quantitative, analytical, and design skills pursue a research-intensive program leading to a substantial contribution to knowledge in multidisciplinary areas including mechanical and electrical engineering.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. For admission to the doctor of philosophy (PhD) in mechatronic systems engineering program, a student must have a master's degree in mechanical engineering, electrical engineering, mechatronics engineering or a related field, and have submitted evidence of capability to undertake substantial original research.

Program Requirements

This program consists of course work, a qualifying examination, and a thesis for a minimum of 21 units. Students may take additional courses to correct any deficiencies in their background upon approval of their supervisor. If the subject matter of a listed course has been previously completed with graduate credit, the course may not be completed again for credit.

Students must complete one of
MSE 801 - Writing for Engineers (3)
ENSC 803 - Writing for Publication (3)

and two MSE graduate courses selected in consultation with their supervisor

and two graduate technical courses from FAS or SCI

and a qualifying exam
MSE 890 - PhD Qualifying Examination

and a thesis
MSE 899 - PhD Thesis (6)

Program Length

Students are expected to complete the program requirements within four years.

Other Information

Transfer to PhD from Master in Applied Science

Proceeding to a PhD program without completing a master's degree is discouraged. However, a student may be transferred when all of the following conditions have been met which are above the minimum university requirements:

REVISED CALENDAR ENTRY

- The application for a transfer is submitted within the first six terms of the MASc program at SFU;
- All the MASc coursework requirements have been completed with a CGPA of 3.67/4.33 or better;
- A recommendation by the student's supervisor indicates demonstrated potential for outstanding research;
- The student's supervisory committee and the graduate program committee approve.

Annual Progress Review

The student's progress will be reviewed at least once every 12 months by the supervisory committee. At each annual review, the student presents a summary of his/her work to date, with the second review normally being the research proposal defence as described in the section for Qualifying Examination (see above). Students not making satisfactory progress in their research topics, or failing to demonstrate satisfactory knowledge and understanding of recent publications in their general area of research, or failing to have their revised research proposal approved by their supervisory committee within 24 months of admission, may be required to withdraw from the program as per section 1.8.2 Review of Unsatisfactory Progress of the Graduate General Regulations.

Optional Industrial Internship

Students in the PhD program may complete an optional internship course of paid practical experience in an appropriate industrial setting to complement their academic studies. The internship will appear on the student's transcript, but does not count towards the student's CGPA and course requirements for the degree. Students require a pre-approval from both their supervisor and the graduate program chair in order to apply for the internship.

Qualifying Exam

To qualify, the student will submit a brief written research proposal and defend it orally to his/her supervisory committee within the first 24 months of admission. The proposal's defence will be judged according to the feasibility and scientific merits of the proposed research, and demonstration of a sophisticated understanding of general material in the student's major area of research. This level of understanding is associated with senior undergraduate and first year graduate course material. The possible outcomes of the qualifying examination are the following: Satisfactory or Unsatisfactory. A student with an unsatisfactory grade may be permitted to take the exam a second time. A student with an outcome of unsatisfactory for a second time is required to withdraw from the program.

Thesis

Students define and undertake original research, the results of which are reported in a thesis. An examining committee is formed as defined in graduate general regulation 1.9.3. The supervisor will be a Mechatronic Systems Engineering faculty member approved by the graduate program committee.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



FACULTY OF
ARTS AND SOCIAL SCIENCES

MEMO

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ATTENTION: Jeff Derksen, Dean
Graduate & Postdoctoral Studies

FROM : Sean Zwagerman, Chair
Faculty of Arts and Social Sciences Graduate Studies Committee

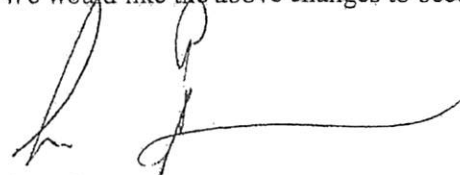
RE: FASSGSC Proposals

DATE: May 15, 2019

The Faculty of Arts and Social Sciences Graduate Committee met on May 2, 2019 and passed the attached motions. Please place these items on the agenda for the next SGSC meeting.

1. **Department of Economics**
 - a) The calendar change of the MA program and associated calendar changes
 - b) ~~The deletion of ECON 988 and associated calendar changes~~
2. **Department of Political Science**
 - a) ~~The calendar changes for POL 804~~
3. **Department of English**
 - a) ~~The deletion of ENGL 890 and associated calendar changes~~
4. **Urban Studies Program**
 - a) ~~The new course URB 601~~
 - b) ~~The new course URB 602~~
5. **Department of Psychology**
 - a) ~~The proposed TRSS program~~
 - b) ~~The minor changes to CRIM/TRSS courses~~

We would like the above changes to become effective Spring 2019²⁰.



Sean Zwagerman
Associate Dean, Faculty of Arts and Social Sciences



MEMO

ATTENTION Sean Zwagerman, Chair, FASSGSC

FROM Alexander Karaivanov, Graduate Chair, Dept. of Economics

RE Curriculum changes

DATE April 11, 2019

At its meeting on April 9, 2019, the Department of Economics approved the following graduate program changes:

1. Calendar changes to the Economics MA program (deletion of the Extended Essays Option and other changes). Complete text edits, rationale and revised calendar entry are attached.
- ~~2. Deletion of ECON 998 MA Essays. Course deletion form and rationale are attached.~~

Please place this proposal on the agenda of the next meeting of the Faculty of Arts and Social Sciences Graduate Studies Curriculum Committee. Thank you in advance.

Sincerely,

Alexander Karaivanov
Graduate Chair
Department of Economics

Calendar Entry Change for Economics (Master of Arts)

<p>Summary of changes:</p> <ol style="list-style-type: none"> 1. Text edits in the program admission requirements and other minor changes (see below) 2. Deletion of the Economics MA <u>Extended Essays Option</u>, the related ECON 998 course, and associated text
<p>Rationale for changes:</p> <ol style="list-style-type: none"> 1. Bring the MA admission requirements and graduate elective courses requirements up to date and make them consistent with current department practice. 2. The Extended Essays Option has not been used for more than 10 years. No current or future student demand is projected. This deletion streamlines the MA program and brings it in line with current department practice.
<p>Effective term and year: Spring 2020</p>
<p>Will this change impact current students? If yes, what is the plan for current students?</p> <ol style="list-style-type: none"> 1. No current students will be affected. 2. No current students are enrolled in the Extended Essays program option and ECON 998.

FROM	TO
<p>Admission Requirements</p> <p>Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. As well, the department requires that the applicant must hold a bachelor's degree with honours in economics or business administration, or must complete additional work to that standard. Normally, the graduate admissions committee will specify the appropriate additional requirements at the time of admission.</p>	<p>Admission Requirements</p> <p>Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar.</p>
<p>Program Requirements</p>	<p>Program Requirements</p>

This program has ~~four~~ options and consists of course work and either a thesis, ~~two extended essays~~, research project, or research paper, for a minimum of 30 units.

[text skipped, no changes]

Project Option

and three graduate elective ECON courses**
and a project

ECON 999 - MA Project (6)

~~Extended Essays Option~~

~~and two graduate elective ECON courses**
and two extended essays~~

~~ECON 998 - MA Essays (6)~~

Thesis Option

and two graduate elective ECON courses**
and a thesis

ECON 991 - MA Thesis (6)

*ECON 798 is not required if a grade acceptable to the graduate program committee has been obtained in equivalent courses. An undergraduate course can be used with the approval of the graduate program committee.

**The elective courses are graduate courses from Economics or, with permission of the graduate program chair, courses in ~~graduate business administration~~, or other subjects.

This program has **three** options and consists of course work and either a thesis, research project, or research paper, for a minimum of 30 units.

[text skipped, no changes]

Project Option

and three graduate elective ECON courses**
and a project

ECON 999 - MA Project (6)

Thesis Option

and two graduate elective ECON courses**
and a thesis

ECON 991 - MA Thesis (6)

*ECON 798 is not required if a grade acceptable to the graduate program committee has been obtained in equivalent courses. An undergraduate course can be used with the approval of the graduate program committee.

The elective courses are graduate courses from Economics or, with permission of the graduate program chair, **graduate courses in other subjects.

Program Length

Students are expected to complete the program requirements in three terms for the course option, four terms for the project option, and five terms for the thesis option.

<p>Research and Oral Examination</p> <p>The thesis, two extended essays, and project must meet the standards set out in the Graduate General Regulations (see 1.9). An oral examination is required covering the students' written research in particular, and program in general, as outlined in the Graduate General Regulations.</p> <p>Program Length</p> <p>Students are expected to complete the program requirements in three terms for the course option, four terms for the project option, and five terms for the extended essays or thesis option.</p> <p><i>[text skipped, no changes]</i></p>	<p>Other Information</p> <p>Research and Oral Examination</p> <p>The thesis and project must meet the standards set out in the Graduate General Regulations (see 1.9). An oral examination is required covering the students' written research in particular, and program in general, as outlined in the Graduate General Regulations.</p> <p><i>[text skipped, no changes]</i></p>
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FACULTY OF ARTS AND SOCIAL SCIENCES

Date: May 16, 2019

Office of the Dean

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FAX: 778.782.3033

www.sfu.ca/fass.html

To: Jeff Derksen, Dean and Associate Provost
From: Sean Zwagerman, Chair, FASS Graduate Studies Committee
Re: revised items and delegated authority

Dear Dr. Derksen,

The following items are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for Spring, 2020:

- ~~Unit change for FREN 896, as recommended by the Associate Director, Graduate Admissions, Records and Registration, and approved under delegated authority by the Chair of the FASS Graduate Studies Committee.~~
- Revised calendar entry for FREN MA, now including changes in wording recommended by SGSC.
- ~~Title change for PHIL 899, approved by SGSC on June 4, 2019 and resubmitted here with required signatures.~~
- ~~Unit change for PHIL 898, as recommended by the Associate Director, Graduate Admissions, Records and Registration, and approved under delegated authority by the Chair of the FASS Graduate Studies Committee.~~
- Revised calendar entry for PHIL MA.

Regards,

A handwritten signature in black ink, appearing to be 'S. Zwagerman', written over a horizontal line.

Sean Zwagerman
Associate Dean, Graduate and Postdoctoral Studies,
Faculty of Arts and Social Sciences
Associate Professor, Department of English

EMO

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88 University Drive
Burnaby BC
Canada V5A 1S6

ATTENTION Dr Sean Zwagerman, Chair of FASSGSC | TEL

FROM Dr.Réjean Canac Marquis , Graduate Chair, Department of
French

RE Calendar entry changes

CC:

DATE May 16, 2019

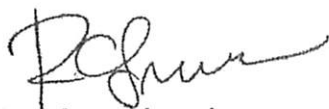
12 pm

Dear Sean,

Please receive the following items for consideration and approval:

1. A revised online calendar entry for the French Graduate Program. The revisions follow new recommended format guidelines and only include minor changes:
 - a. minor credit modification for FREN 896 (see item 2 below);
 - b. Under Thesis and Thesis Proposal: Elimination of redundant references to GGRs;
 - c. Under Extended Essay: Specification of option in case the minimum B grade is not achieved and whether extended essays are submitted to Library.

- ~~2. A course change form for FREN 896 "Thesis-Project". This course is graded on an IP/CO basis, which does not affect the CGPA, and its reduction from 3 to 0 credit allows the core program to count for 50% of total credits and realigns both MA options (Thesis and Extended Essay) to 30 total credits each.~~



Réjean Canac Marquis



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

Department of French | Faculty of Arts and Social Sciences
Simon Fraser University Calendar | Summer 2019

French

MASTER OF ARTS

The French Graduate program, with its breadth of topics in literature and linguistics, offers an interdisciplinary curriculum. The linguistics component consists of the study of a variety of linguistic theories and their specific application to the analysis of French. The literature option includes a comprehensive genre- and period-oriented set of courses. Since a major goal of all students enrolled in a French program is mastery of the language, all courses are given in French.

For information about FREN course disciplines, visit <http://www.sfu.ca/french/en.html>.

Admission Requirements

Candidates must satisfy the general admission requirements as shown in the Graduate General Regulations.

Program admission requires a sound background in French literature or French linguistics, as well as a good command of both oral and written French. Candidates lacking these must remedy the deficiency before admission is granted through satisfactory completion of one or two terms as a qualifying student.

Upon admission, each student will be assigned a temporary supervisor.

The program's degree requirements may be completed 'with thesis' or 'with extended essays.' In each case, the student works under a supervisory committee's direction that has been appointed by the end of the first term.

At the time of enrolment in their second term, students must declare their MA option and confirm their senior supervisor. Required course work, thesis proposal and other requirements are approved by the graduate chair.

Program Requirements

Students may be required to complete additional courses to remedy deficiencies or to ensure suitable thesis preparation or project research. The following are the minimum requirements.

MA-Thesis

Students in the MA with thesis option successfully complete a minimum of 30 units consisting of 4 graduate courses totaling 12 units from their chosen concentration, either in linguistics or literature including FREN 803, plus a thesis proposal (FREN 896) and a thesis

(FREN 898). Within the 12 units and with their senior supervisor's approval, students may complete up to 9 units of FREN 800 level courses offered concurrently with a 400 level course. Students may complete up to 1 graduate course (3 units) outside the Department of French. Students are required to submit a thesis proposal (3 units) with a grading of satisfactory or unsatisfactory, no later than one term following the completion of course work. The examination of the thesis proposal consists of an oral presentation before the student's supervisory committee. In addition, students must complete a thesis of a minimum of 70 pages to a maximum of 90 pages in linguistics or literature in accordance with the Graduate General Regulations (1.9 -1.11) (15 units). The thesis is defended at an oral examination as described in 1.9 and 1.10 of the Graduate General Regulations.

MA Extended Essays

Students selecting this option are required to complete a minimum of 30 units consisting of 24 units of graduate coursework and two extended essays (6 units), as detailed in what follows.

The 24 units of coursework must include at least 9 French graduate units in linguistics and literature. With their senior supervisor's approval, students may take a combination of:

- up to 12 units of 800 level courses that are offered concurrently with 400 level courses in the Department of French, such as FREN 804, 806, 811, 816, 820, 823, 824, 825, 826, 852

- up to 15 units of graduate coursework outside the Department of French, including up to 12 units outside this university

In addition to the 24 units of graduate coursework, students are required to complete two extended essays (FREN 998) totaling 6 units evaluated by course instructors. Each extended essay must be a minimum of 25 pages in length. The essays must be submitted no later than one term following the end of students' coursework. A minimum B grade is required for FREN 998.

Language Requirement

Students must demonstrate a level of competence in written and oral French acceptable to the Graduate Committee. Students are also expected to demonstrate a working knowledge of English to function within the University community.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

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REVISED
CALENDAR ENTRY

French

MASTER OF ARTS

Description of Program

The French graduate program, with its breadth of topics in literature and linguistics, offers an interdisciplinary curriculum. The linguistics component consists of the study of a variety of linguistic theories and their specific application to the analysis of French. The literature option includes a comprehensive genre- and period-oriented set of courses. Since a major goal of all students enrolled in a French program is mastery of the language, courses in the Department of French are given in French.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. Admission requires a sound background in French literature or French linguistics, as well as good command of both oral and written French. Candidates lacking these must remedy the deficiency before admission is granted through satisfactory completion of one or two terms as a qualifying student. Students are also expected to demonstrate a University-level knowledge of English.

Program Requirements

This program has two options, consisting of course work and either a thesis or two extended essays, for a minimum of 30 graduate units. Students should consult their supervisors when selecting elective course work.

Students must complete

9 units from their chosen concentration in either French linguistics or literature

and requirements from either a thesis or extended essays option

Extended Essays

15 units of graduate course work

and extended essays

FREN 998 - Extended Essays (6)

Thesis option

FREN 803 - Research Methods I French Linguistics and/or French Literature (3)

and 3 additional units from their chosen concentration in either French linguistics or literature

and a thesis proposal

FREN 896 - Thesis proposal (0)

and a thesis

FREN 898 - MA Thesis (15)

REVISED
CALENDAR ENTRY

Program Length

Students are expected to complete the program requirements in six terms.

Other Information

Course Work

Elective course work should be selected in consultation with the supervisor.

Supervision

Upon admission, each student will be assigned a temporary supervisor. By the time of enrolment in their second term, students must declare their MA option and confirm their supervisor. Required course work, thesis proposal, and other requirements are approved by the graduate chair.

Thesis Proposal and Thesis

Students in the thesis option are required to submit the thesis proposal no later than one term following the completion of their course work. The examination of the proposal consists of an oral presentation before the student's supervisory committee. Students must receive a grade of Complete (CO) in order to proceed with writing their thesis. The thesis itself is expected to be 70-90 pages.

Extended Essay

In the extended essays option, the two extended essays are evaluated by instructors in courses previously taken by the student. Each extended essay must be a minimum 25 pages in length. The essays must be submitted no later than one term following the completion of coursework. A minimum grade of B is required for successful completion. Essays can be revised and resubmitted until a minimum B grade is reached. Extended essays need not be submitted to SFU Library.

Language Requirements

Students are normally expected to write the extended essay or thesis in French. Under special circumstances and with the approval of the supervisor, this work may be written in English.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



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MEMORANDUM

Attention: Sean Zwagerman, Associate Dean, FASS

Date: May 16th, 2019

From: Holly Andersen, Philosophy Graduate Program Chair

Re: Updated Calendar Entry for Philosophy MA and ~~Course Name Change for PHIL 899; Unit Change for PHIL 898~~

Attached please find edits to the calendar entry for Philosophy MA, a ~~course change form for PHIL 899 and course change forms for PHIL 898 and 899~~. There are no major revisions to the calendar entry; these are simply editorial updates prompted by Graduate and Postdoctoral Studies as part of the Graduate Degree project. ~~The name changes make the course easier to identify by students as the appropriate one for the professional paper project option.~~ The update was approved by the Philosophy Department Committee of the Whole in discussion and live vote at our retreat in April 2018. Please approve this item and include it in the next SGSC meeting.

Sincerely,

Holly Andersen



Please note:

To view the Spring 2019 Academic Calendar go to www.sfu.ca/students/calendar/2019/spring.html

Department of Philosophy | Faculty of Arts and Social Sciences
Simon Fraser University Calendar | Summer 2019

Philosophy

MASTER OF ARTS

Admission Requirements

See graduate general regulation 1.3.3 for university admission requirements.

In addition, the applicant must have either a 3.33 cumulative grade point average (CGPA) or a 3.5 grade point average (GPA) in upper division philosophy courses.

Honours degrees, where available, are preferred.

The department pays close attention to letters of reference and writing samples.

If previous work does not satisfy the above conditions, additional undergraduate courses may be required to enrol as a qualifying student before admission.

Application

See www.sfu.ca/philosophy, or visit the department.

Program Requirements

- completion of six courses (excluding PHIL 898 and 899), one of which may be a 300 or 400 division undergraduate course with an A-grade or better, and graduate studies committee permission. One course must be PHIL 880, which will be completed in the first graduate study year.
- demonstrated competence in foreign languages as the graduate studies committee requires for the proposed research
- demonstrated competence in formal logic at the level of PHIL 210 or higher, when relevant to the student's research

Degree Program Completion

There are three ways to complete a philosophy master's degree. The following outlines these options.

Non-Thesis Option

This is the recommended degree program option for most students who plan to apply for admission to a philosophy PhD program after completing an MA.

The program broadens and deepens philosophical education and allows the student to develop the necessary materials for a successful PhD program application. This non-thesis option has the following additional requirements.

- completion of at least one course in each philosophy area: value theory; metaphysics and epistemology; history of philosophy. Taken together with upper division undergraduate courses completed previously or in addition to the MA requirement, three courses in each area are required.
- completion of seven rather than six courses (excluding PHIL 899)
- a cumulative grade point average of at least 3.5 is required at graduation
- PHIL 899, completed under the senior supervisor's direction. The student undertakes the project of revising a paper, normally from a previously completed graduate course, to a standard suitable in form and content for submission to a professional journal. The resulting professional paper normally will not exceed 30 pages.
- the professional paper produced in PHIL 899 is examined by an examining committee consisting of at least two faculty members who together assign a grade of pass with distinction, pass, or fail. A student who fails may be permitted a second and final attempt.
- the professional paper is presented in a public forum

Specialized Thesis Option

This option is intended for those who have a particular project and supervisor in mind when they enter the program, and especially those with interdisciplinary interests. It has the following specific requirements.

- the student normally enters the program with a well-defined project and a permanent (as opposed to interim) senior supervisor.
- the project and course of study is approved by the graduate studies committee.
- up to three of the required courses may be from outside the Department of Philosophy.
- a thesis, normally no more than 100 pages in length, giving evidence of independent critical ability is submitted and successfully defended.
- the specialization is noted on the student's final transcript under the heading 'Committee Decisions.'

Classic Thesis Option

This option has the following specific requirements.

- completion of at least one course in each area of philosophy: value theory, metaphysics and epistemology; history of philosophy.
- a thesis, normally not more than 100 pages in length, giving evidence of independent critical ability is submitted and successfully defended.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.

REVISED
CALENDAR ENTRY

Philosophy

MASTER OF ARTS

Description of Program

Our course-based, two-year program is geared towards students who are considering pursuing a PhD in philosophy and want to strengthen their application or make a decision about alternate career paths in a supportive setting. Our requirements are structured to give students a strong foundation across sub-fields in philosophy while also ensuring that they produce high-quality, refined, original work in an area(s) in which they specialize further. We also include developing the practices of philosophical pedagogy as part of our philosophical training for students.

The department specializes in Ethics and Social/Political Philosophy, Philosophy of Mind, Philosophy of Science, Epistemology and Metaphysics, History of Early Modern Philosophy, and Logic.

Admission Requirements

Applicants must satisfy the University admission requirements as stated in Graduate General Regulations 1.3 in the SFU Calendar. In addition, the applicant must have either a 3.33 cumulative grade point average (CGPA) or a 3.5 CGPA in upper division philosophy courses.

The Philosophy Department requires a higher score on the TOEFL and IELTS than in the SFU Calendar. Applicants must score at least 22 in each of the sections of the TOEFL. Applicants must score at least 7.0 in each section on the academic IELTS. All student are required to demonstrate competence in formal logic at the upper division undergraduate level or higher.

Program Requirements

This program consists of coursework and a project or thesis for a minimum of 39 units.

Students must complete
PHIL 880 - Pro-Seminar (5)

and five graduate Philosophy courses

and requirements for one of the options below

Project Option

and one additional Philosophy graduate course

and a project

PHIL 899 – Professional Paper Project Completion (6)

Thesis Option

and a thesis

PHIL 898 – MA Thesis (11)

REVISED CALENDAR ENTRY

Program Length

Students are expected to complete the program requirements in six terms.

Other Information

Course Work

Students are required to complete at least one course in each of the three main area streams: value theory, metaphysics and epistemology, history of philosophy. Before enrollment in course work, the GPC will evaluate past course work completed in the area streams and recommend the remaining course work area distribution. One course may be a 300 division Philosophy undergraduate course with a grade of A- (GPA of 3.67) or better.

In order to receive credit towards graduation, a course must be passed with a grade of at least B+ (GPA of 3.33). Grades of B or lower do not count towards graduation requirements of any kind.

Satisfactory Progress

A cumulative grade point average of at least 3.5 is required to maintain good standing in the program.

Failure to maintain the required minimum GPA may result in a probationary status and a required plan set out as a contract with the student and any of the supervisor, Graduate Chair, or Department Chair, for returning to good standing. Failure to fulfill the contract for return to good standing will result in a student being required to withdraw from the program.

Project Option

The project option, called the professional paper, is recommended for most students who plan to apply for admission to a philosophy PhD program after completing an MA.

The project is completed under the supervisor's direction. It involves revising a paper, normally from a previously completed graduate course, to a standard suitable in form and content for submission to a professional journal. The resulting professional paper normally will not exceed 30 pages.

The professional paper is presented in a public form and is examined by an examining committee consisting of at least two faculty members who together assign a grade of satisfactory or unsatisfactory. Committees may require minor revisions to be completed prior to awarding of degree. A student who receives unsatisfactory grade may be permitted a second and final attempt. The paper is submitted to the Department Graduate Secretary at least two weeks in advance of the scheduled presentation date. The paper does not need to be deposited to the library.

Thesis Option

The thesis, normally not more than 100 pages in length, gives evidence of independent critical ability and is submitted and successfully defended in a public form and is examined as per GGR 1.9 and graded as per GGR 1.10.2.

Academic Requirements within the Graduate General Regulations

All graduate students must satisfy the academic requirements that are specified in the Graduate General Regulations, as well as the specific requirements for the program in which they are enrolled.



**BEEDIE SCHOOL
OF BUSINESS**

Segal Graduate School

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busadmin@sfu.ca

Memo to SGSC

To: Senate Graduate Studies Committee
From: Andrew Gemino, Associate Dean, Graduate Programs
Re: Curriculum revisions to MBA and MOT MBA programs
Date: April 24, 2019

The following curriculum revisions have been approved by the Beedie School of Business and are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for Spring 2020.

Please include them on the next SGSC agenda.

- ~~• Course change for BUS 725 Title change~~
- MOT MBA calendar entry for science and technology commercialization graduate certificate program waivers has been updated to account for BUS 780 no longer being offered in the MOT MBA program.

Thank you for your attention herein. Should you have any questions or concerns, please do not hesitate to contact me.

Dr. Andrew Gemino
Professor, Management Information Systems
Associate Dean, Graduate Programs, Beedie School of Business

Calendar Entry Change for Management of Technology MBA

<p>Summary of change: Language regarding partial advanced credit for BUS 780 is removed</p>
<p>Rationale for change: BUS 780 is no longer offered in the MOT MBA program</p>
<p>Effective term and year: Spring 2020</p>
<p>Will this change impact current students? If yes, what is the plan for current students? No</p>

FROM	TO
<p>Program Requirements This program consists of course work for a minimum of 54 units. Courses from other SFU graduate business programs, or a special topic course, may be substituted for courses below at the discretion of the academic director.</p> <p>Students must complete all of</p> <p>BUS 750 - Managing Technological Innovation (4) BUS 751 - Managerial Economics for Technology Firms (4) BUS 752 - Strategic Management of Technology-Based Firms (4) BUS 753 - Business Ethics (2) BUS 754 - Marketing Tech-based Products and Services (4) BUS 755 - Topics in International Business (2) BUS 756 - Strategic Use of Information and Knowledge (4) BUS 757 - Negotiations (2) BUS 758 - Business Operations Design (4) BUS 761 - Leadership for the Technology Driven Enterprise (2) BUS 762 - Project Management (4)</p>	<p>Program Requirements This program consists of course work for a minimum of 54 units. Courses from other SFU graduate business programs, or a special topic course, may be substituted for courses below at the discretion of the academic director.</p> <p>Students must complete all of</p> <p>BUS 750 - Managing Technological Innovation (4) BUS 751 - Managerial Economics for Technology Firms (4) BUS 752 - Strategic Management of Technology-Based Firms (4) BUS 753 - Business Ethics (2) BUS 754 - Marketing Tech-based Products and Services (4) BUS 755 - Topics in International Business (2) BUS 756 - Strategic Use of Information and Knowledge (4) BUS 757 - Negotiations (2) BUS 758 - Business Operations Design (4) BUS 761 - Leadership for the Technology Driven Enterprise (2) BUS 762 - Project Management (4)</p>

BUS 763 - Managing Self and Others: An Organizational Simulation (2)

BUS 764 - Financing the Organization (4)

BUS 766 - Financial and Managerial Accounting (4)

BUS 782 - Capstone Simulation (2)

BUS 783 - Entrepreneurship (4)

BUS 784 - Special Topics (2)

Students who have completed or have been enrolled in the graduate diploma in business administration program at SFU may receive advance credit for BUS 751, 753, 754, 756, 762, 764 and 766 at the discretion of the academic director. A minimum grade of a B (3.0) in the course equivalent is required.

Students who have completed or have been enrolled in the science and technology commercialization graduate certificate program at SFU may receive advance credit for BUS 754, 764, 761, ~~and partial credit for BUS 780 (4 out of 6 credits)~~ at the discretion of the academic director. A minimum grade of a B (3.0) in the course equivalent is required.

BUS 763 - Managing Self and Others: An Organizational Simulation (2)

BUS 764 - Financing the Organization (4)

BUS 766 - Financial and Managerial Accounting (4)

BUS 782 - Capstone Simulation (2)

BUS 783 - Entrepreneurship (4)

BUS 784 - Special Topics (2)

Students who have completed or have been enrolled in the graduate diploma in business administration program at SFU may receive advance credit for BUS 751, 753, 754, 756, 762, 764 and 766 at the discretion of the academic director. A minimum grade of a B (3.0) in the course equivalent is required.

Students who have completed or have been enrolled in the science and technology commercialization graduate certificate program at SFU may receive advance credit for BUS 754, 764 **and** 761 at the discretion of the academic director. A minimum grade of a B (3.0) in the course equivalent is required.

Memo to SGSC

To: Senate Graduate Studies Committee
From: Andrew Gemino, Chair, Faculty of Graduate Studies Committee (Business)
Re: Curriculum revisions to *PhD Program*
Date: May 28, 2019

The following curriculum revisions have been approved by the Faculty of Graduate Studies Committee (Beedie School of Business) and are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for Spring 2020.

1. Change in General Description of the Program in Current Calendar

Rationale for the Change: To more accurately reflect program goals

2. Change in Program Requirements

Rationale for the Change: The PhD Program Strategy is to create stronger cohorts by rooting a rigorous program of core and methodology courses with advanced study in the field of specialization. The following changes will strengthen the PhD program strategy.

- Removal of Breadth/Interdisciplinary requirements
- Addition of Core/Disciplinary requirements
- Addition of Advanced Elective Course Requirements for Financial Accounting and Finance Specialization
- Addition of Research Seminar Course Requirements

~~3. Course Changes: BUS 961, 962 and 963, BUS 990~~

~~Rationale: Included in Graduate Course Change Forms.~~

~~4. Course Deletions: BUS 964, 975, 976, 977 and 978~~

~~Rationale: Included in Graduate Course Deletion Forms.~~

Thank you for your attention herein. Should you have any questions or concerns, please do not hesitate to contact me.



Dr. Andrew Gemino
Chair, Faculty of Graduate Studies Committee, Beedie school of Business
Associate Dean, Graduate Programs, Beedie School of Business
Professor, Management Information Systems

Calendar Entry Change for Business Administration Doctor of Philosophy

Summary of change:

Change in General Description of the Program in Current Calendar.

Change in Program Requirements

Rationale for change:

Change in General Description of the Program in Current Calendar

Rationale: To more accurately reflect program goals

Change in Program Requirements

Rationale: At present, the PhD program relies on a handful of dedicated supervisors who closely mentor and tutor individual doctoral students. These supervisors are familiar with the courses that their students need to take, and when those courses are not available, teach them through directed studies. Beedie is undertaking changes to the PhD program to increase faculty access to, and participation with, doctoral students, while at the same time giving PhD students more freedom to choose their own research trajectories and their own advisory committee. In order to do that, we need to create a more effective, structured and balanced doctoral training program that can be centrally administered and that gives both students and faculty clear direction on course requirements. On top of the proposed changes, we will be overlaying different “tracks” within the management disciplines that will permit this intellectual journey and facilitate advising by faculty members who may not have had the opportunity under the previous regime. Students will be able to explore different methodological and substantive courses before they commit to their research trajectory. This will help especially those who have not completed research masters and/or are unsure about their research topic. There will be an increase in the units for degree completion for Financial Accounting & Finance Specialization. There will be no increase in tuition.

Removal of Breadth/Interdisciplinary Requirements and Addition of Core/Disciplinary Requirements

Rationale: The interdisciplinary requirements had been chosen to attempt to link our PhD courses with the broader business faculty’s strategic priorities; the justification was that we should seek to impart our doctoral students with knowledge in the strategic areas of focus for our faculty. However, the execution of this strategy resulted in courses that were unpopular because they were unrelated to the actual focus of the individual PhD students who had come to Beedie to work with a particular faculty member (or members) rather than to gain access to the faculty’s research priorities as a whole. In addition, it took our resources from offering core, methodology, and disciplinary courses. The strategic rationale for dropping these “strategic priority” courses is that we think the feedback loop between our research priorities and PhD education is a longer one: the priorities should influence where faculty strength emerges, and faculty strength should draw PhD students. We will not force students who come to work with strong faculty members to take some of their limited coursework on fields that they will not need to flourish as academics. We added core/disciplinary requirements after undertaking a benchmark exercise (the first in some time) that compared our own PhD program with others in Canada and the United States, as well as interviewing current and

former PhD students. We found that we were not training all of our students sufficiently well in research methodology and the core and disciplinary requirements are a solution to that. In fact, most of our students were well enough trained but that was because their supervisor had insisted on their taking a couple of additional courses as such would be standard practice for other doctoral programs. Our proposed changes merely codify existing best practice.

Addition of Advanced Elective Course Requirements for Financial Accounting & Finance Specialization

Rationale: Advanced elective course requirements will provide students with opportunities to develop methodological strategies for examining research questions in their discipline and ability to identify important interesting knowledge gaps that could form the foundation for journal publications in their discipline. Students will development fluent, persuasive scholarly writing skills conforming to the style and conventions of the discipline.

Addition of Research Seminar Course Requirements

Rationale: Research seminar course requirements will provide students with opportunities to actively participate and contribute to the seminar series by inviting guest speakers and presenting their own work. Students will organize, synthesize, and integrate ideas coherently and logically to present an argument in a compelling manner. All of our graduates will have the ability to present to academic and practitioner audiences in a convincing and engaging manner. At the same time, our PhD students will contribute to the research environment of the Beedie School and bring our doctoral program closer inside our research ecosystem. This will serve to increase research and co-authoring opportunities between PhD students, and between students and faculty, as well as increasing students' comfort inside formal academic environments in a safe environment so that by the time they present at conferences and the job market they are confident.

Effective term and year: Spring 2020

Will this change impact current students? If yes, what is the plan for current students?
No

FROM	TO
<p>Business Administration</p> <p>DOCTOR OF PHILOSOPHY</p> <p>The Beedie School of Business doctor of philosophy program is a hybrid program that combines a rigorous program of doctoral seminars and other graduate</p>	<p>Business Administration</p> <p>DOCTOR OF PHILOSOPHY</p> <p>The Beedie School of Business offers a doctor of philosophy (PhD) program that help students create a path to careers in and beyond academia. The</p>

course work, along with a tailored mentorship with a faculty member who acts as the student's senior supervisor. We offer students a PhD program customized to individual interests and abilities. Students collaboratively develop their own curriculum to meet the challenges and opportunities of business and management theory and practice. The goal is to develop highly capable scholars for careers in academia.

All students specialize in a traditional business discipline (i.e. marketing, organization studies, accounting, finance, MIS, strategy, technology operations management, international business) as well as broadening their academic background in one of the interdisciplinary areas that are the Beedie School of Business' key strengths (i.e. innovation, globalization/emerging markets, sustainability).

[...]

Program Requirements

Non-Finance Specialization

This specialization consists of required courses, breadth courses, research method courses, specialization courses, a research project, a comprehensive exam, a thesis proposal, and a thesis for a minimum of 62 units. The course requirements consist of three required courses and graduate courses that are selected by the senior supervisor and the doctoral candidate's committee to create a curriculum which will be flexible within certain limits. Those who lack a business degree may, at the discretion of the PhD director, be asked to

program combines coursework in methodology and areas of specialization (including accounting, entrepreneurship, finance, international business, management and organization studies, management information systems, marketing, sustainability, strategy, and technology and operations management) with faculty mentoring and substantive original research.

[...]

Program Requirements

This program consists of course work, a comprehensive exam, research seminars, a research project, a thesis proposal, and a thesis for a minimum of 55 units.

Students must complete all of

seven courses chosen in consultation with the student's supervisor

and research seminar three times
BUS 963 – Research Seminar in Selected Topics (2)

and a research project

BUS 990 – Research Project (6)

and the requirements for one of the specializations below

and a comprehensive exam
BUS 991 – PhD Comprehensive Exam (6)

and a thesis proposal

complete additional courses beyond the program requirements in order to improve their background knowledge.

Students must complete a minimum of 11 approved graduate courses, including all of BUS 980 - Theory Development in Business Administration (4)
BUS 981 - Research Methods in Business Administration (4)
BUS 982 - Dissertation Development Workshop (4)

and a minimum of two breadth courses

BUS 961 - Selected Topics in Innovation (4)
BUS 962 - Selected Topics in Globalization/Emerging Markets (4)
BUS 963 - Selected Topics in Capital/Risk Management (4)
BUS 964 - Selected Topics in Sustainability (4)

and a minimum of three research methods courses*

and a minimum of three specialization courses**

and a research project

BUS 990 - Research Project (6)

and a comprehensive exam

BUS 991 - PhD Comprehensive Exam (6)

and a thesis

BUS 992 - PhD Thesis (6)

and a thesis proposal

BUS 993 - Thesis Proposal (6)

BUS 993 - Thesis Proposal (6)

and a thesis

BUS 992 - PhD Thesis (6)

Management Specialization

must also complete all of
BUS 980 - Theory Development in Business Administration (4)
BUS 982 - Dissertation Development Workshop (4)

and an additional elective course

Financial Accounting and Finance Specialization

must also complete all of
ECON 803 - Microeconomic Theory II (4)
ECON 807 - Macroeconomic Theory and Policy (4)
ECON 837 - Econometric Theory I (4)

[...]

Other Information

Course Work

Graduate elective course work must be approved by the supervisor to create a curriculum which will be flexible within certain limits.

Those who have already done graduate study in business or a related field may request to be exempt or to substitute some of the course work in consultation with the director of the PhD program.

Students who lack a business degree may, at the discretion of the PhD Program Director, be asked to

The candidate must fulfil the university requirements regarding a thesis and its public defence.

Finance Specialization

This specialization consists of required courses, research method courses, specialization courses, a research project, a comprehensive examination, a thesis proposal, and a thesis for a minimum of 54 units. The course requirements consist of three required courses and graduate courses selected by the senior supervisor and the doctoral candidate's committee to create a curriculum which will be flexible within certain limits.

Students must complete a minimum of nine approved graduate courses, including all of

ECON 803 - Microeconomic Theory II (4)

ECON 815 - Financial Economics (4)

ECON 837 - Econometrics I (4)

and a minimum of three research methods courses*

and a minimum of three specialization courses**

and a research project

BUS 990 - Research Project (6)

and a comprehensive exam

BUS 991 - PhD Comprehensive Exam (6)

and a thesis

BUS 992 - PhD Thesis (6)

complete up to four additional graduate courses beyond the program requirements.

Comprehensive Examination

Students will choose two areas in which they will take their comprehensive examinations. The reading list for the comprehensive exam will be a subset of the reading assignments in the Beedie School of Business graduate courses, special topics, as well as approved graduate courses in other programs or universities.

Students prepare two thematically organized bibliography/reading lists. They should reflect the significant works in the areas in which the student is to be examined. They should also provide a foundation for research in these areas. The lists must be submitted to the PhD program administration and the student's supervisory committee for approval.

Research Seminar Courses

Students in their second through fourth years of studies are required to enrol in research seminar course each year. Students will contribute to the seminar series by inviting guest speakers and presenting their own work.

[...]

and a thesis proposal

BUS 993 - Thesis Proposal (6)

The candidate must fulfill the university requirements regarding a thesis and its public defence.

*** ~~Research Method Courses for both Specializations~~**

~~Some examples are: Quantitative and/or Qualitative Research Methods, Multivariate Methods, Experimental Design. The three research methods courses will be completed in the first five terms. The student's supervisor can add to, or substitute, methods courses in consultation with the director of the PhD program.~~

**** ~~Specialization Courses for both Specializations~~**

~~These courses are set and administered by the senior supervisor in consultation with the student's supervisory committee and the PhD program director. These courses can include Beedie School of Business graduate courses, directed studies courses, special topics, as well as approved graduate courses in other programs or universities. It is highly recommended that at least one of the specialization courses be given by the student's senior supervisor. In special cases, the senior supervisor can recommend, in consultation with the PhD director, that the student complete fewer, or more, specialization courses than the minimum required. At least two courses should be completed at Simon Fraser University. [...]~~