1.0 Degree Title
Specify the two degrees for concurrent degree programs
Bachelor of Arts and Science

1.1 Major (Legacy = Subject) (30 char. max.)
Cognitive Science

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable) (30 char. max.)

1.4 Category

☐ Faculty Program (FP)
☐ Major
☐ Joint Major
☐ Major Concentration (CON)
☐ Minor
☐ Minor Concentration (CON)
☐ Honours (HON)
☐ Joint Honours
☐ Component (HC)
☐ Internship/Co-op
☐ Thesis (T)
☐ Non-Thesis (N)
☐ Other
☐ Please specify

Interfaculty

1.5 Complete Program Title
Interfaculty Cognitive Science

2.0 Administering Faculty/Unit

Faculty of Science

Offering Faculty/Department

Faculty of Arts, Faculty of Science/Psychology, Computer Science, Linguistics, Neuroscience, Philosophy

3.0 Effective Term of revision or retirement

Please give reasons in 5.0 “Rationale” in the case of retirement
(Ex. Sept. 2004 = 200409)

Retirement

Term: 201609

4.0 Existing Credit Weight

Proposed Credit Weight

54

5.0 Rationale for revised program

The main motivation for the changes are (1) to give all students broader exposure to the sub-areas of CogSci, and (2) to ensure that students can get enough training in any one area to move on to graduate studies (which was a challenge for some streams).

6.0 Revised Program Description (Maximum 150 words)

The Interfaculty Program Cognitive Science, which is restricted to students in the B.A. & Sc., is designed to allow students to explore the multidisciplinary study of cognition in humans and machines. The goal is to understand the principles of intelligence and thought with the hope that this will lead to a better understanding of the mind and of learning, and to the development of intelligent devices.

Note: B.A. & Sc. students who take interfaculty programs must take at least 21 credits in Arts and 21 credits in Science across their interfaculty program and their minor or minor concentration.
### 7.0 List of existing program and proposed program

**Existing program** (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

<table>
<thead>
<tr>
<th>Subj Code/Crse Num</th>
<th>Title</th>
<th>Credit weight</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Proposed program** (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

<table>
<thead>
<tr>
<th>Subj Code/Crse Num</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
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</table>

#### 3 core credits from the following logic courses:
- COMP 230 Logic and Computability (3 credits)
- MATH 318 Mathematical Logic (3 credits)
- PHIL 210 Introduction to Deductive Logic 1 (3 credits)

#### 3 credits from the following capstone courses:

- COMP 417 Introduction Robotics and Intelligent Systems (3 credits)
- COMP 424 Artificial Intelligence (3 credits)
- LING 419 Linguistic Theory and its Foundations (3 credits)
- LING 565 Pragmatics (3 credits)
- PSYC 506 Cognitive Neuroscience of Attention (3 credits)
- PSYC 532 Cognitive Science (3 credits)
- PSYC 538 Categorization, Communication & Consciousness (3 credits)

(continued on Attachment 1A)
48 credits are selected as follows:

18 credits from program offerings in one of the following five units: Computer Science, Linguistics, Neuroscience, Philosophy, or Psychology.

12 credits from program offerings in one of the four remaining units.

18 credits chosen from program offerings across all five units.

Of the 48 Complementary Course credits, 12 credits taken must be at the 400 level or higher.

Computer Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 202</td>
<td>Foundations of Programming (3 credits)</td>
</tr>
<tr>
<td>COMP 206</td>
<td>Introduction to Software Systems (3 credits)</td>
</tr>
<tr>
<td>COMP 250</td>
<td>Introduction to Computer Science (3 credits)</td>
</tr>
<tr>
<td>COMP 251</td>
<td>Algorithms and Data Structures (3 credits)</td>
</tr>
<tr>
<td>COMP 280</td>
<td>History and Philosophy of Computing (3 credits)</td>
</tr>
<tr>
<td>COMP 302</td>
<td>Programming Languages and Paradigms (3 credits)</td>
</tr>
<tr>
<td>COMP 330</td>
<td>Theory of Computation (3 credits)</td>
</tr>
<tr>
<td>COMP 360</td>
<td>Algorithm Design (3 credits)</td>
</tr>
<tr>
<td>COMP 400</td>
<td>Honours Project in Computer Science (3 credits)</td>
</tr>
<tr>
<td>COMP 409</td>
<td>Concurrent Programming (3 credits)</td>
</tr>
<tr>
<td>COMP 417</td>
<td>Introduction Robotics and Intelligent Systems (3 credits)</td>
</tr>
<tr>
<td>COMP 421</td>
<td>Database Systems (3 credits)</td>
</tr>
<tr>
<td>COMP 424</td>
<td>Artificial Intelligence (3 credits)</td>
</tr>
<tr>
<td>COMP 526</td>
<td>Probabilistic Reasoning and AI (3 credits)</td>
</tr>
<tr>
<td>COMP 527</td>
<td>Logic and Computation (3 credits)</td>
</tr>
<tr>
<td>COMP 531</td>
<td>Advanced Theory of Computation (3 credits)</td>
</tr>
<tr>
<td>COMP 558</td>
<td>Fundamentals of Computer Vision (3 credits)</td>
</tr>
<tr>
<td>MATH 222</td>
<td>Calculus 3 (3 credits)</td>
</tr>
<tr>
<td>MATH 223</td>
<td>Linear Algebra (3 credits)</td>
</tr>
<tr>
<td>MATH 240</td>
<td>Discrete Structures 1 (3 credits)</td>
</tr>
</tbody>
</table>

Linguistics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 201</td>
<td>Introduction to Linguistics (3 credits)</td>
</tr>
<tr>
<td>LING 210</td>
<td>Introduction to Speech Science (3 credits)</td>
</tr>
<tr>
<td>LING 330</td>
<td>Phonetics (3 credits)</td>
</tr>
<tr>
<td>LING 331</td>
<td>Phonology 1 (3 credits)</td>
</tr>
<tr>
<td>LING 350</td>
<td>Linguistic Aspects of Bilingualism (3 credits)</td>
</tr>
<tr>
<td>LING 355</td>
<td>Language Acquisition 1 (3 credits)</td>
</tr>
<tr>
<td>LING 360</td>
<td>Introduction to Semantics (3 credits)</td>
</tr>
<tr>
<td>LING 371</td>
<td>Syntax 1 (3 credits)</td>
</tr>
<tr>
<td>LING 380</td>
<td>Neuroscience of Language (3 credits)</td>
</tr>
<tr>
<td>LING 417</td>
<td>Topics at the Interfaces 1 (3 credits)</td>
</tr>
<tr>
<td>LING 418</td>
<td>Topics at the Interfaces 2 (3 credits)</td>
</tr>
<tr>
<td>LING 419</td>
<td>Linguistic Theory and its Foundations (3 credits)</td>
</tr>
</tbody>
</table>

(continued on Attachment 1B)
Attachment 1B – continuation of Section 7.0

LING 440 Morphology (3 credits)
LING 450 Laboratory Linguistics (3 credits)
LING 451 Acquisition of Phonology (3 credits)
LING 455 Second Language Syntax (3 credits)
LING 461 Formal Methods in Linguistics (3 credits)
LING 530 Acoustic Phonetics (3 credits)
LING 531 Phonology 2 (3 credits)
LING 555 Language Acquisition 2 (3 credits)
LING 555 Pragmatics (3 credits)
LING 571 Syntax 2 (3 credits)
LING 590 Language Acquisition and Breakdown (3 credits)

Philosophy

NSCI 300 Neuroethics (3 credits)
PHIL 304 Chomsky (3 credits)
PHIL 306 Philosophy of Mind (3 credits)
PHIL 310 Intermediate Logic (3 credits)
PHIL 311 Philosophy of Mathematics (3 credits)
PHIL 341 Philosophy of Science 1 (3 credits)
PHIL 354 Plato (3 credits)
PHIL 355 Aristotle (3 credits)
PHIL 360 17th Century Philosophy (3 credits)
PHIL 361 18th Century Philosophy (3 credits)
PHIL 367 19th Century Philosophy (3 credits)
PHIL 370 Problems in Analytic Philosophy (3 credits)
PHIL 410 Advanced Topics in Logic 1 (3 credits)
PHIL 411 Topics in Philosophy of Logic and Mathematics (3 credits)
PHIL 415 Philosophy of Language (3 credits)
PHIL 419 Epistemology (3 credits)
PHIL 421 Metaphysics (3 credits)
PHIL 441 Philosophy of Science 2 (3 credits)
PHIL 470 Topics in Contemporary Analytic Philosophy (3 credits)
PHIL 474 Phenomenology (3 credits)

Psychology

ANTH 440 Cognitive Anthropology (3 credits)
MUMT 250 Music Perception and Cognition (3 credits)
NSCI 201 Introduction to Neuroscience 2 (3 credits)
PSYC 204 Introduction to Psychological Statistics (3 credits)
PSYC 212 Perception (3 credits)
PSYC 213 Cognition (3 credits)
PSYC 301 Animal Learning & Theory (3 credits)
PSYC 302 The Psychology of Pain (3 credits)
PSYC 304 Child Development (3 credits)
PSYC 305 Statistics for Experimental Design (3 credits)
PSYC 310 Intelligence (3 credits)
PSYC 311 Human Cognition and the Brain (3 credits)
PSYC 315 Computational Psychology (3 credits)
PSYC 316 Psychology of Deafness (3 credits)
PSYC 318 Behavioural Neuroscience 2 (3 credits)
PSYC 340 Psychology of Language (3 credits)
PSYC 341 The Psychology of Bilingualism (3 credits)

(continued on Attachment 1C)
Attachment 1C – continuation of Section 7.0

PSYC 352 Cognitive Psychology Laboratory (3 credits)
PSYC 406 Psychological Tests (3 credits)
PSYC 410 Special Topics in Neuropsychology (3 credits)
PSYC 413 Cognitive Development (3 credits)
PSYC 470 Memory and Brain (3 credits)
PSYC 501 Auditory Perception (3 credits)
PSYC 506 Cognitive Neuroscience of Attention (3 credits)
PSYC 522 Neurochemistry and Behaviour (3 credits)
PSYC 526 Advances in Visual Perception (3 credits)
PSYC 529 Music Cognition (3 credits)
PSYC 532 Cognitive Science (3 credits)
PSYC 537 Advanced Seminar in Psychology of Language (3 credits)
PSYC 545 Topics in Language Acquisition (3 credits)
PSYC 561 Methods: Developmental Psycholinguistics (3 credits)

Neuroscience

* Students select either PHGY 311 or BIOL 306, but not both.
** Students select either BIOL 514 or PSYC 514, but not both.
*** Students select either NSCI 200 or PHGY 209, but not both.

ANAT 321 Circuitry of the Human Brain (3 credits)
BIOL 200 Molecular Biology (3 credits)
BIOL 201 Cell Biology and Metabolism (3 credits)
BIOL 306 Neural Basis of Behaviour (3 credits) *
BIOL 507 Animal Communication (3 credits)
BIOL 514 Neurobiology Learning and Memory (3 credits) **
BIOL 532 Developmental Neurobiology Seminar (3 credits)
BIOL 588 Advances in Molecular/Cellular Neurobiology (3 credits)
NEUR 310 Cellular Neurobiology (3 credits)
NSCI 200 Introduction to Neuroscience 1 (3 credits) ***
NSCI 201 Introduction to Neuroscience 2 (3 credits)
NSCI 300 Neuroethics (3 credits)
PHGY 209 Mammalian Physiology 1 (3 credits) ***

(continued on Attachment 1D)
Attachment 1D – continuation of Section 7.0

PHGY 311 Channels, Synapses & Hormones (3 credits)
PHGY 314 Integrative Neuroscience (3 credits)
PHGY 556 Topics in Systems Neuroscience (3 credits)
PSYC 211 Introductory Behavioural Neuroscience (3 credits)
PSYC 302 The Psychology of Pain (3 credits)
PSYC 311 Human Cognition and the Brain (3 credits)
PSYC 317 Genes and Behaviour (3 credits)
PSYC 318 Behavioural Neuroscience 2 (3 credits)
PSYC 319 Hormones and Behaviour (3 credits)
PSYC 410 Special Topics in Neuropsychology (3 credits)
PSYC 427 Sensorimotor Behaviour (3 credits)
PSYC 444 Sleep Mechanisms and Behaviour (3 credits)
PSYC 452 Psychoneuroendocrinology (3 credits)
PSYC 506 Cognitive Neuroscience of Attention (3 credits)
PSYC 514 Neurobiology of Learning and Memory (3 credits) **
PSYC 526 Advances in Visual Perception (3 credits)
PSYC 532 Cognitive Science (3 credits)
PSYT 301 Issues in Drug Dependence (3 credits)
PSYT 500 Advances: Neurobiology of Mental Disorders (3 credits)
PSYT 502 Brain Evolution and Psychiatry (3 credits)
PSYT 515 Advanced Studies in Addiction (3 credits)

Research Course

COGS 401 Research Cognitive Science 1 (6 credits)