

DATE: April 17, 2020

TO: Senate

FROM: Dr. Dwight Deugo, Vice-Provost and Associate Vice-President (Academic), and Chair, Senate Quality Assurance and Planning Committee

RE: 2021-22 Calendar Curriculum Proposals  
**Graduate & Undergraduate Major Modifications**

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### **Background**

Following Faculty Board approval and, as part of academic quality assurance, major curriculum modifications are considered by the Senate Committee on Curriculum, Admissions and Studies Policy (SCCASP) and the Senate Quality Assurance and Planning Committee (SQAPC) before being recommended to Senate.

### **Library Reports (as required)**

In electronic communication members of the Library staff, upon review of the proposal, confirmed no additional resources were required for the 2021-22 major modifications included below.

### **Documentation**

Recommended calendar language, along with supplemental documentation as appropriate, are provided for consideration and approval.

### **Major Modifications**

- 1. BSC Linguistics: Concentration in Linguistic Theory (Computer Science) and Concentration in Psycholinguistics and Communication Disorders (Computer Science)**

SCCASP approval: April 7, 2020

SQAPC approval: April 16, 2020

### **Senate Motion April 24, 2020**

**THAT** Senate approve the introduction of the Concentrations in Linguistic Theory (Computer Science) and Psycholinguistics and Communication Disorders (Computer Science) to the BSC Linguistics program as presented with effect from Fall 2021.

## MEMORANDUM

**To:** Senate Quality Assurance and Planning Committee (SQAPC)

**From:** Daniel Siddiqi, Associate Director of Linguistics

**CC:** Charles Macdonald, Dean of the Faculty of Science  
Naomi Cappuccino, Associate Dean (Academic)

**Date:** March 18, 2020

**Subject:** A2 Major Modification to Bachelor of Science in Linguistics

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### Modification Description

Background:

1. When we were designing the BSc in Linguistics, we wanted students to have two paths to completing their various Faculty of Science breadth requirements. One way was through Neuroscience + Biology and the other was Psychology + Biology. SCAP (Science Academic Programs) had the suggestion to make the paths explicit: one a Neuroscience focus and the other a Psychology focus. By the time this got through to the calendar, because “focus” is not an official term in the glossary, these focuses became parentheticals in the name of the degrees. So today, two focuses and two concentrations became four calendar entries:

- [B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory \(Neuroscience\)](#)
- [B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory \(Psychology\)](#)
- [B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders \(Neuroscience\)](#)
- [B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders \(Psychology\)](#)

2. At the annual Linguistics Society of America meeting in January, I had the opportunity to talk to a representative from Alphabet (Google’s parent company) about the needs his company has for graduates from our programs (computational linguistics is a major prospective employment opportunity for our students). The outcome of this meeting is two-fold: a) Students interested in work in computational linguistics do not need the same breadth as our clinical students (i.e. human anatomy and neuroscience or psychology); and b) Our students are not getting the background in programming that they need and don’t have room in the BSc to pick up a minor in Computer Sciences.

Proposal:

The solution to this is simple: we will create a third focus in the BSc. We worked with Michel Barbeau, director of Computer Science, and designed a Computer Science focus to complement the Neuroscience and Psychology focus (the chosen classes come entirely from COMP). If this focus garners a lot of student support for a few years, LING and COMP will probably endeavor to launch a joint MA in

Computational Linguistics and perhaps a BSc at the same time (we would need hires and new classes for both). This proposal is entirely resource neutral and creates a named path for students taking the COMP courses as their breadth requirements. The changes made to support the new pathways are straightforward. What follows is the existing Neuroscience focus (the Psychology focus is nearly identical) taken directly from the Calendar:

7. 3.5 credits in Neuroscience

a. 2.0 credits in:

NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease

NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease

NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience

NEUR 2002 [0.5] Introduction to Statistics in Neuroscience

b. 1.5 credits from:

NEUR 2201 [0.5] Cellular and Molecular Neuroscience

NEUR 2202 [0.5] Neurodevelopment and Plasticity

NEUR 3206 [0.5] Sensory and Motor Neuroscience

NEUR 3207 [0.5] Integrative Neuroscience

NEUR 3303 [0.5] The Neuroscience of Consciousness

8. 1.5 credits in:

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

BIOL 3306 [0.5] Human Anatomy and Physiology

9. 1.0 credit from:

CHEM 1001 [0.5] General Chemistry I

& CHEM 1002 [0.5] General Chemistry II

CHEM 1005 [0.5] Elementary Chemistry I

& CHEM 1006 [0.5] Elementary Chemistry II

The proposed Computer Science focus removes all the courses from sections 7, 8 and 9 and replaces them entirely with the following COMP courses and an additional 2.0 credits in free electives, half of which need to be used to satisfy the experimental science requirement.

7. 4.0 credits in Computer Science Requirements

a. 1.5 credits in:

COMP 1005 [0.5] Introduction to Computer Science I

COMP 1006 [0.5] Introduction to Computer Science II

COMP 1805 [0.5] Discrete Structures I

b. 1.5 credits in:

COMP 2401 [0.5] Introduction to Systems Programming

COMP 2402 [0.5] Abstract Data Types and Algorithms

COMP 2404 [0.5] Introduction to Software Engineering

c. 1.0 credit from:

COMP 2406 [0.5] Fundamentals of Web Applications

COMP 2804 [0.5] Discrete Structures II

COMP 3000 [0.5] Operating Systems

COMP 3002 [0.5] Compiler Construction

COMP 3004 [0.5] Object-Oriented Software Engineering

COMP 3005 [0.5] Database Management Systems

COMP 3007 [0.5] Programming Paradigms

COMP 3008 [0.5] Human-Computer Interaction

9. 2.0 credits in free electives (in addition to the standard B.Sc. programs which allow 4.0 free electives. These concentrations allow students to have 6.0 free electives in total).

With the new Computer Science focus, we will add two more degrees to our calendar options (one for each concentration):

**B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science)**

**B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science)**

*The Learning Outcomes for the Concentrations are found in Appendix A.*

#### **Impact on Other Programs**

COMP will see a small enrollment increase in their core courses comparable to several students electing to take a COMP minor (3-5 students are possibly expected). Michel Barbeau, the Director of Computer Science, has submitted a letter of support. COMP's only condition is that these two degrees always have the same admissions requirements as their degrees. We agree to that condition. That is true right now, but we are under the impression that COMP will soon change their admission requirements. When they do, we will match them.

#### **Student Demand**

Employment in computational linguistics, especially human-computer interfacing, is one of the most viable career options for science students in linguistics. This focus in our degree will give them the background and accreditation that they need to be exceptionally competitive in that market. Indeed, we believe this will make Carleton a leader of this kind of bachelor degree and we will be able to use this focus to pilot future collaborations between Linguistics and Computer Science.

#### **Resources**

This proposal is 100% resource neutral.

## APPENDIX A: B.Sc. Honours w/ a Concentration in Linguistic Theory (Computer Science)

1. Be able to communicate the difference between studying language as an internal object in the mind (i.e., our linguistic competence) vs. as an external one (i.e., language use in society).
2. Be able to demonstrate knowledge of linguistic diversity by identifying and arguing against common misconceptions related to stigmatized language forms and/or varieties.
3. Be able to compare languages and identify systematic differences and similarities in phonetics, phonology, morphology, syntax, and semantics.
4. Be able to collect, organize and analyze linguistic data from diverse languages, to form hypotheses about language structure/use and to test those hypotheses against new data.
5. Be able to formulate scientifically sound arguments and analyses of linguistic data, using the tools, terminology, scientific approaches and style of argumentation of the field of linguistics.
6. Be able to compare and contrast disparate theoretical frameworks, and evaluate their effectiveness with respect to a variety of linguistic data.
7. Be able to incorporate research methods of computer science and programming skills to the development and evaluation of computational linguistic research programs and models.
8. Be able to incorporate and apply linguistics theory into research methods of computer science and programming.

## B.Sc. Honours w/ a Concentration in Psycholinguistics & Communications Disorders (Computer Science)

1. Be able to communicate the difference between studying language as an internal object in the mind (i.e., our linguistic competence) vs. as an external one (i.e., language use in society).
2. Be able to demonstrate knowledge of linguistic diversity by identifying and arguing against common misconceptions related to stigmatized language forms and/or varieties.
3. Be able to compare languages and identify systematic differences and similarities in phonetics, phonology, and syntax.
4. Be able to collect, organize and analyze linguistic data from diverse languages, to form hypotheses about language structure/use and to test those hypotheses against new data.
5. Be able to formulate scientifically sound arguments and analyses of linguistic data, using the tools, terminology, scientific approaches and style of argumentation of the field of linguistics.

6. Be able to compare and contrast disparate experimental research methodologies and evaluate their effectiveness with respect to clinical application.
7. Be able to incorporate research methods of computer science and programming skills to the development and evaluation of computational linguistic research programs and models.
8. Be able to incorporate and apply linguistics theory into research methods of computer science and programming.

STATEMENT OF SUPPORT FROM SISTER UNIT

RE:

1. B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science)
2. B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science)

I support this change unconditionally.  I

do not support this change.

I support this change, with the following reservations:

The conditions of admission for the above two programs must include the conditions of admission for the Computer Science B.C.S. programs.

Signature: 

Name: Michel Barbeau

Title: Interim Director

Academic unit:

School of Computer

Science

Date: March 18, 2020

# Program Change Request

## New Program Proposal

Date Submitted: 02/11/20 2:09 pm

Viewing: **TBD-2001 : B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science)**

Last edit: 04/03/20 8:57 am

Last modified by: sarahcleary

Changes proposed by: traceywright

### In Workflow

1. LALS ChairDir UG
2. SCI Dean
3. AS Dean
4. SCI FCC
5. AS FCC
6. SCI FBoard
7. AS FBoard
8. PRE SCCASP
9. SCCASP
10. SQAPC
11. Senate
12. PRE CalEditor
13. CalEditor

### Approval Path

1. 02/11/20 1:48 pm  
David Wood  
(davidwood): Rollback to Initiator
2. 02/11/20 2:39 pm  
David Wood  
(davidwood): Approved for LALS ChairDir UG
3. 03/19/20 8:49 am  
Naomi Cappuccino  
(naomicappuccino): Approved for SCI Dean
4. 04/02/20 10:17 am  
Peter Thompson  
(peterthompson): Approved for AS Dean
5. 04/02/20 10:52 am  
Naomi Cappuccino  
(naomicappuccino): Approved for SCI FCC
6. 04/02/20 2:34 pm  
Peter Thompson  
(peterthompson): Approved for AS FCC
7. 04/02/20 2:35 pm  
Naomi Cappuccino  
(naomicappuccino): Approved for SCI FBoard
8. 04/02/20 2:54 pm  
Peter Thompson



(peterthompson):  
 Approved for AS FBoard  
 9. 04/03/20 10:04 am  
 Sarah Cleary  
 (sarahcleary): Approved  
 for PRE SCCASP

Effective Date	2021-22
Workflow	majormod
Program Code	TBD-2001
Level	Undergraduate
Faculty	Faculty of Arts and Social Sciences Faculty of Science
Academic Unit	School of Linguistics and Language Studies
Degree	Bachelor of Science Honours
Title	B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science)

## Program Requirements

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### B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science) (20.0 credits)

#### A. Credits Included in the Major CGPA (9.0 credits)

<b>1. 1.0 credit in:</b>		1.0
<a href="#">ALDS 1001</a> [0.5]	Language Matters: Introduction to ALDS	
<a href="#">LING 1001</a> [0.5]	Introduction to Linguistics I	
<b>2. 1.0 credit in:</b>		1.0
<a href="#">LING 2005</a> [0.5]	Linguistic Analysis	
<a href="#">LING 2007</a> [0.5]	Phonetics	
<b>3. 1.0 credit in:</b>		1.0
<a href="#">LING 3004</a> [0.5]	Syntax I	
<a href="#">LING 3007</a> [0.5]	Phonology I	
<b>4. 1.0 credit in LING at the 4000-level</b>		1.0
<b>5. 1.5 credits in LING, excluding <a href="#">LING 1100</a></b>		1.5
<b>6. 3.5 credits from the Concentration</b>		3.5
a. 0.5 credit in:		
<a href="#">LING 1002</a> [0.5]	Introduction to Linguistics II	
b. 2.0 credits in:		
<a href="#">LING 2604</a> [0.5]	Communication Disorders I	
<a href="#">LING 3601</a> [0.5]	Language Processing and the Brain	

<a href="#">LING 3603</a> [0.5]	Child Language
<a href="#">LING 3604</a> [0.5]	Communication Disorders II
c. 1.0 credit from:	
<a href="#">LING 4601</a> [0.5]	Cognitive Neuroscience of Language
<a href="#">LING 4603</a> [0.5]	First Language Acquisition
<a href="#">LING 4605</a> [0.5]	Psycholinguistic Research Methods
<a href="#">LING 4606</a> [0.5]	Statistics for Language Research

B. Credits Not Included in the Major CGPA (11.0 credits)

**7. 4.0 credits in Computer Science Requirements** 4.0

a. 1.5 credits in:

<a href="#">COMP 1005</a> [0.5]	Introduction to Computer Science I
<a href="#">COMP 1006</a> [0.5]	Introduction to Computer Science II
<a href="#">COMP 1805</a> [0.5]	Discrete Structures I

b. 1.5 credits in:

<a href="#">COMP 2401</a> [0.5]	Introduction to Systems Programming
<a href="#">COMP 2402</a> [0.5]	Abstract Data Types and Algorithms
<a href="#">COMP 2404</a> [0.5]	Introduction to Software Engineering

c. 1.0 credit from:

<a href="#">COMP 2406</a> [0.5]	Fundamentals of Web Applications
<a href="#">COMP 2804</a> [0.5]	Discrete Structures II
<a href="#">COMP 3000</a> [0.5]	Operating Systems
<a href="#">COMP 3002</a> [0.5]	Compiler Construction
<a href="#">COMP 3004</a> [0.5]	Object-Oriented Software Engineering
<a href="#">COMP 3005</a> [0.5]	Database Management Systems
<a href="#">COMP 3007</a> [0.5]	Programming Paradigms
<a href="#">COMP 3008</a> [0.5]	Human-Computer Interaction

**8. 1.0 credit in:** 1.0

<a href="#">MATH 1007</a> [0.5]	Elementary Calculus I
<a href="#">MATH 1107</a> [0.5]	Linear Algebra I

**9. 6.0 credits in free electives** 6.0

C. Additional Requirements

10. School Language Proficiency Requirement must be satisfied

11. Bachelor of Science Experimental Science Requirement must be satisfied

Total Credits 20.0

New Resources No New Resources

Summary Add: B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders Computer Science) (20.0 credits)

Rationale Adds a third structured pathway to satisfying the Science Continuation requirement and addresses a glaring need to satisfy an audience interested in joining the technology industry on graduation. Also serves as a pilot program for future programs in Computational Linguistics

Transition/Implementation There is no change in course offerings associated with this new degree. This redistributes some of LING's BSc students from BIOL, CHEM, NEUR and PSYC to COMP for their science continuation courses. All courses are offered by existing faculty.

Advertising for this new program will be done with typical means: on the SLALS website, at linguistics events, and at various undergraduate program fairs, such as OUF

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Program reviewer  
comments

**davidwood (02/11/20 1:48 pm):** Rollback: To revise.

**sarahcleary (04/03/20 8:57 am):** Minor formatting.

Key: 2001

# Program Change Request

## New Program Proposal

Date Submitted: 02/11/20 2:05 pm

Viewing: **TBD-2000 : B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science)**

Last edit: 04/03/20 8:55 am

Last modified by: sarahcleary

Changes proposed by: traceywright

### In Workflow

1. LALS ChairDir UG
2. SCI Dean
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Naomi Cappuccino  
(naomicappuccino): Approved for SCI Dean
4. 04/02/20 10:16 am  
Peter Thompson  
(peterthompson): Approved for AS Dean
5. 04/02/20 10:52 am  
Naomi Cappuccino  
(naomicappuccino): Approved for SCI FCC
6. 04/02/20 2:34 pm  
Peter Thompson  
(peterthompson): Approved for AS FCC
7. 04/02/20 2:35 pm  
Naomi Cappuccino  
(naomicappuccino): Approved for SCI FBoard
8. 04/02/20 2:44 pm  
Peter Thompson

(peterthompson):  
 Approved for AS FBoard  
 9. 04/03/20 10:04 am  
 Sarah Cleary  
 (sarahcleary): Approved  
 for PRE SCCASP

Effective Date	2021-22
Workflow	majormod
Program Code	TBD-2000
Level	Undergraduate
Faculty	Faculty of Arts and Social Sciences Faculty of Science
Academic Unit	School of Linguistics and Language Studies
Degree	Bachelor of Science Honours
Title	B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science)

## Program Requirements

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### B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science) (20.0 credits)

#### A. Credits Included in the Major CGPA (9.0 credits)

<b>1. 1.0 credit in:</b>		1.0
<a href="#">ALDS 1001</a> [0.5]	Language Matters: Introduction to ALDS	
<a href="#">LING 1001</a> [0.5]	Introduction to Linguistics I	
<b>2. 1.0 credit in:</b>		1.0
<a href="#">LING 2005</a> [0.5]	Linguistic Analysis	
<a href="#">LING 2007</a> [0.5]	Phonetics	
<b>3. 1.0 credit in:</b>		1.0
<a href="#">LING 3004</a> [0.5]	Syntax I	
<a href="#">LING 3007</a> [0.5]	Phonology I	
<b>4. 1.0 credit in LING at the 4000-level</b>		1.0
<b>5. 1.5 credits in LING, excluding <a href="#">LING 1100</a></b>		1.5
<b>6. 3.5 credits from the Concentration</b>		3.5
a. 1.0 credit in:		
<a href="#">LING 3005</a> [0.5]	Morphology I	
<a href="#">LING 3505</a> [0.5]	Semantics	
b. 1.0 credit from:		
<a href="#">LING 4004</a> [0.5]	Syntax II	
<a href="#">LING 4005</a> [0.5]	Morphology II	

<a href="#">LING 4007</a> [0.5]	Phonology II
<a href="#">LING 4505</a> [0.5]	Formal Semantics
<a href="#">LING 4510</a> [0.5]	Lexical Semantics

c. 1.5 credits in LING, excluding [LING 1100](#)

B. Credits Not Included in the Major CGPA (11.0 credits)

**7. 4.0 credits in Computer Science Requirements**

4.0

a. 1.5 credits in:

<a href="#">COMP 1005</a> [0.5]	Introduction to Computer Science I
<a href="#">COMP 1006</a> [0.5]	Introduction to Computer Science II
<a href="#">COMP 1805</a> [0.5]	Discrete Structures I

b. 1.5 credits in:

<a href="#">COMP 2401</a> [0.5]	Introduction to Systems Programming
<a href="#">COMP 2402</a> [0.5]	Abstract Data Types and Algorithms
<a href="#">COMP 2404</a> [0.5]	Introduction to Software Engineering

c. 1.0 credit from:

<a href="#">COMP 2406</a> [0.5]	Fundamentals of Web Applications
<a href="#">COMP 2804</a> [0.5]	Discrete Structures II
<a href="#">COMP 3000</a> [0.5]	Operating Systems
<a href="#">COMP 3002</a> [0.5]	Compiler Construction
<a href="#">COMP 3004</a> [0.5]	Object-Oriented Software Engineering
<a href="#">COMP 3005</a> [0.5]	Database Management Systems
<a href="#">COMP 3007</a> [0.5]	Programming Paradigms
<a href="#">COMP 3008</a> [0.5]	Human-Computer Interaction

**8. 1.0 credit in:**

1.0

<a href="#">MATH 1007</a> [0.5]	Elementary Calculus I
<a href="#">MATH 1107</a> [0.5]	Linear Algebra I

**9. 6.0 credits in free electives**

6.0

C. Additional Requirements

10. School Language Proficiency Requirement must be satisfied

11. Bachelor of Science Experimental Science Requirement must be satisfied

Total Credits

20.0

New Resources

No New Resources

Summary

Add B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science) (20.0 credits)

Rationale

Adds a third structured pathway to satisfying the Science Continuation requirement and addresses a glaring need to satisfy an audience interested in joining the technology industry on graduation. Also serves as a pilot program for future programs in Computational Linguistics.

Transition/Implementation

There is no change in course offerings associated with this new degree. This redistributes some of LING's BSc students from BIOL, CHEM, NEUR and PSYC to COMP for their science continuation courses. All courses are offered by existing faculty. Advertising for this new program will be done with typical means: on the SLALS website, at linguistics events, and at various undergraduate program fairs, such as OUF.

Program reviewer comments

**davidwood (02/11/20 1:48 pm):** Rollback: To revise.  
**sarahcleary (04/03/20 8:55 am):** Minor formatting.

