FOR APPROVAL   **PUBLIC**   **OPEN SESSION**

TO: UTSC Academic Affairs Committee

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DATE: April 25, 2019 for May 2, 2019

AGENDA ITEM: 5

ITEM IDENTIFICATION:

Minor Undergraduate Modifications- Science academic unit

JURISDICTIONAL INFORMATION:

University of Toronto Scarborough Academic Affairs Committee (AAC) "is concerned with matters affecting the teaching, learning and research functions of the Campus" (*AAC Terms of Reference, Section 4*). Under section 5.6 of its terms of reference, the Committee is responsible for approval of "Major and minor modifications to existing degree programs." The AAC has responsibility for the approval of Major and Minor modifications to existing programs as defined by the University of Toronto Quality Assurance Process (*UTQAP, Section 3.1*).

GOVERNANCE PATH:

1. UTSC Academic Affairs Committee [For Approval] (May 2, 2019)

PREVIOUS ACTION TAKEN:

No previous action in governance has been taken on this item.

HIGHLIGHTS:

This package includes minor modifications to undergraduate curriculum, submitted by the Sciences academic units identified below, which require governance approval. Minor

modifications to curriculum are understood as those that do not have a significant impact on program or course learning outcomes. They require governance approval when they modestly change the nature of a program or course.

1. The Department of Computer and Mathematical Sciences (Report: Department of Computer and Mathematical Sciences)
   o 7 new courses
     ▪ MATD35H3 Introduction to Discrete Dynamical Systems
     ▪ MATD44H3 Topics in Combinatorics
     ▪ MATD46H3 Partial Differential Equations
     ▪ MATD50H3 Mathematical Introduction to Game Theory
     ▪ STAC33H3 Introduction to Applied Statistics
     ▪ STAC53H3 Applied Data Collection
     ▪ STAD80H3 Analysis of Big Data

MATD35H3: provides an introduction to dynamical systems and helps to fill a gap in the department's curriculum. It is intended for students in Mathematics programs.

MATD44H3: an advanced course on combinatorics that is intended to students in all CMS programs.

MATD46H3: focuses on partial differential equations which are a core part of mathematics. It is intended for students in Mathematics programs.

MATD50H3: adds to a suite of courses in applied mathematics and will benefit students in Mathematics programs.

STAC33H3: similar to STAC32H3 but tailored to meet the needs of students in the Specialist, Major and Minor programs in Statistics.

STAC53H3: will allow students to gain experience using statistical software. It is designed for students in Statistics and Applied Statistics programs.

STAD80H3: is an advanced course on big data science that will benefit students in all CMS programs.

2. The Department of Psychology (Report: Department of Psychology)
   o 6 program changes
     ▪ Major in Mental Health Studies
     ▪ Major in Psychology
     ▪ Specialist (Co-operative) in Mental Health Studies
     ▪ Specialist (Co-operative) in Psychology
     ▪ Specialist in Mental Health Studies
     ▪ Specialist in Psychology
   o 5 new courses
     ▪ NROD61H3 Emotional Learning Circuits

- PSYB70H3 Methods in Psychological Science
- PSYC22H3 Infancy
- PSYC24H3 Childhood and Adolescence
- PSYC70H3 Advanced Research Methods Laboratory

Changes to the Specialist/Specialist Co-op programs in Mental Health Studies and Specialist/Specialist Co-op programs in Psychology:
- The grade requirement for admission has been increased from 72% to 75% as part of multi-year process that is designed to decrease enrolment in these programs.
- Changes to course completion requirements are designed to ensure that students are able to achieve the program learning outcomes and also to successfully complete the programs.

Changes to the Major in Mental Health Studies and Major in Psychology:
- The grade requirement for admission has been increased from 64% to 67% as part of a multi-year process that is designed to decrease enrolment in these programs.
- Changes to the course completion requirements are designed to ensure that students are able to achieve the program learning outcomes and also to successfully complete the programs.

NROD61H3: gives students in Neuroscience programs an opportunity to expand their knowledge of emotional learning circuits.

PSYB70H3: will replace PSYB04H3 as the first research methods entry point for all Mental Health Studies and Psychology programs.

PSYC22H3: fills a gap in Developmental Psychology offerings.

PSYC24H3: fills a gap in the curriculum by providing a C-level offering focused on earlier developmental stages of childhood/adolescence.

PSYC70H3: builds upon PSYB70H3 and will be required for students in all Specialist programs in Mental Health Studies and Psychology.

FINANCIAL IMPLICATIONS:

There are no net financial implications to the campus operating budget.

RECOMMENDATION:

Be It Resolved,

THAT the minor modifications to undergraduate programs, submitted by UTSC undergraduate Sciences academic units, as described in Undergraduate Minor Curriculum Modifications for Approval, Report: Department of Computer and Mathematical Sciences, dated May 2, 2019, and Undergraduate Minor Curriculum Modifications for Approval, Report: Department of Psychology, dated May 2, 2019, and recommended by the Vice-Principal, Academic and Dean, Professor William Gough, be approved to be effective as of Fall 2019 for the academic year 2019-20.

DOCUMENTATION PROVIDED:

1. 2019-20 Curriculum Cycle: Undergraduate Minor Curriculum Modifications for Approval Report: Department of Computer and Mathematical Sciences, dated May 2, 2019.
2. 2019-20 Curriculum Cycle: Undergraduate Minor Curriculum Modifications for Approval Report: Department of Psychology, dated May 2, 2019.

2019-20 Curriculum Cycle
Undergraduate Minor Curriculum Modifications for Approval
Report: Department of Computer and Mathematical Sciences
May 02, 2019

Computer & Mathematical Sciences (UTSC), Department of

7 New Courses:

MATD35H3: Introduction to Discrete Dynamical Systems

Description:
This course provides an introduction and exposure to dynamical systems, with particular emphasis on low-dimensional systems such as interval maps and maps of the plane. Through these simple models, students will become acquainted with the mathematical theory of chaos and will explore strange attractors, fractal geometry and the different notions of entropy. The course will focus mainly on examples rather than proofs; students will be encouraged to explore dynamical systems by programming their simulations in Mathematica.

Prerequisites: [[MATA37H3 or MATA36H3] with a grade of B+ or higher] and MATB41H3 and MATC34H3
Corequisites:
Exclusions:
Recommended Preparation:
Enrolment Limits:
Note:

Learning Outcomes:
For students completing a program in Mathematics, it is essential that they gain an understanding of mathematical analysis beyond what is offered in the first and second year calculus courses, and the second year introductory differential equations course. This course provides an introduction and exposure to dynamical systems. As such, it will give students a deeper understanding of this analysis.

Topics Covered:
Examples of dynamical systems. Definition of dynamical system. Rational and irrational rotations, doubling map, piecewise linear maps, the Gauss map. Relationships to base-b expansions and continued fraction expansions. Expanding circle maps.
Topological dynamics. Periodic points. Topological transitivity and minimality.
Symbolic dynamics. Shift spaces. Subshifts of finite type. Coding for interval maps. Kneading theory. Geometric coding for continued fractions. Piecewise linear maps and base-b expansions.
Topological entropy. Definition of topological entropy. Relationship with Shannon entropy and information theory. Computation in examples.
Fractal geometry. Definition of self-similar set. Iterated function systems and Hutchinson's theorem. Examples of fractal sets: the Cantor set, the Koch snowflake, Sierpinski carpets, Apollonian circles. Definition of Hausdorff dimension.

Computation of dimension in the examples.
A bit of complex dynamics. Definition of Julia sets. Newton's method and Julia sets. Definition of the Mandelbrot set.

Methods of Assessment: Assignments, tests and a final exam.

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
The theory of dynamical systems is a fundamental part of modern mathematics and reflects applications in biology, chemistry and physics. This course provides a first introduction and exposure to dynamical systems and helps fill a gap in the department's current curriculum. It is designed to be accessible to students in the Major/ Major Co-op programs in Mathematics. This course is important because most of the C- and D- level analysis courses currently offered require MATB43H3, which is too demanding for these students.

Consultation:
DCC Approval Date: October 9, 2018
RO Approval Date: October 5, 2018

Resources:
The course will be taught by existing faculty, and will be cycled with other C and D level courses. The course will require TA support - these resources will come from the department's existing T.A. budget.

MATD44H3: Topics in Combinatorics

Description:
This course will focus on combinatorics. Topics will be selected by the instructor and will vary from year to year.

Prerequisites: STAB52H3 and [MATC32H3 or MATC44H3]

Corequisites:

Exclusions:

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
This course will build on the C level courses in Combinatorics and Graph Theory. It will introduce students to more sophisticated topics and discuss problems in greater depth. These topics are likely to be of value in more advanced courses, especially graduate courses in probability and computer science.

Topics Covered: The topics will vary from year to year, depending on the instructor.

Methods of Assessment: Assignments and presentations.

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
Both MATC32H and MATC44H have enrolments of 100-150 students. Many students who complete these courses request a reading course on more advanced topics. MATD44H3 is intended to fill this demand for advanced students on combinatorics topics. In addition, combinatorics is vital to parts of Computer Science, Mathematics and Statistics. Therefore this course can serve all CMS programs.

Consultation:
DCC Approval: October 9, 2018
RO Course Code Approval: October 5, 2018

Resources:

The course will be taught by existing faculty and cycled with other C and D level courses with low enrolments. This course will not require TA support.

MATD46H3: Partial Differential Equations

Description:
This course provides an introduction to partial differential equations as they arise in physics, engineering, finance, optimization and geometry. It requires only a basic background in multivariable calculus and ODEs, and is therefore designed to be accessible to most students. It is also meant to introduce beautiful ideas and techniques which are part of most analysts' bag of tools.

Prerequisites: [[MATA37H3 or MATA36H]3 with grade of at least B+] and MATB41H3 and MATB44H3

Corequisites:

Exclusions:

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
Students will be able to solve partial differential equations (PDEs) of elliptic, parabolic and hyperbolic type, and will be able to use them as models for problems in applied sciences and in optimization.
- Students will learn how to model real world problems using partial differential equations.
- Students will understand key features of PDEs, including phenomena in wave propagation and diffusion.
-Students will learn how to explicitly solve PDEs in simple situations.
-Students will learn how to derive fundamental estimates in more complicated situations.
- This course is part of the methodology of the fields of Mathematics and Applied Mathematics, and will allow students to gain both theoretical and practical knowledge.

Topics Covered:
What is a PDE? Linear and nonlinear equations, first and second order equations, static equations and evolution equations, initial and boundary conditions, well-posed problems.
The transport equation: Derivation of the equation in physics and optimization, method of characteristics, conservation laws, the phenomenon of shocks.
Laplace equation and Poisson equation: Physical motivation, boundary value problem, separation of variables, the fundamental solution, mean value formula, maximum principle, smoothness of solutions.
The diffusion equation: derivation as a model for diffusion in physics, finance and geometry. Scaling properties, initial value problem, fundamental solution, solution via Fourier analysis, Duhamel's principle, maximum principle, smoothing effect.
The wave equation: derivation of the equation, the Cauchy problem, solution in one and two spatial dimensions, the principle of causality, energy conservation, formation of singularities.

Methods of Assessment:
- weekly assignments, to keep students up to speed and to give a chance to practice getting and explaining importance of results.
- mid-term and final examinations, to test whether students individually have learned the crucial elements of partial differential equations and analysis required to be a successful mathematician.

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
Partial differential equations are a core part of mathematics, both pure and applied. Every undergrad program in mathematics needs a course on PDEs and their application. Also, currently the department offers a limited number of D-level courses in mathematics, and these options are proof based pure math courses. Therefore, this course will fill a gap in the department's current curriculum and will provide students with additional an D-level option to satisfy their Mathematics Major program.

Resources:
The course will be taught by existing faculty as part of their regular teaching load, and will be cycled with other C and D level courses. This course will not require additional TA resource support.

MATD50H3: Mathematical Introduction to Game Theory

Description:

This course introduces students to combinatorial games, two-player (matrix) games, Nash equilibrium, cooperative games, and multi-player games. Possible additional topics include: repeated (stochastic) games, auctions, voting schemes and Arrow's paradox. Numerous examples will be analyzed in depth, to offer insight into the mathematical theory and its relation to real-life situations.

Prerequisites: MATB24H3 and STAB52H3

Corequisites:

Exclusions: MAT406H

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
Game theory models conflict and cooperation between rational decision-making agents. The central concepts which students will understand include:
- Zero-sum games
- Nash equilibrium
- cooperative games
- adaptive decision making

Topics Covered:
Combinatorial games: Nim and other impartial games; Sprague-Grundy value; existence of a winning strategy in partisan games. Two-player (matrix) games: zero-sum games and Von-Neuman's minimax theorem; general sum-matrix games, prisoner's dilemma, Nash equilibrium, cooperative games, asymmetric information. Multi-player games: coalitions and the Shapley value. Possible additional topics: repeated (stochastic) games; auctions; voting schemes and Arrow's paradox. Mathematical tools that may be introduced include hyperplane separation of convex sets and Brouwer's fixed point theorem. Numerous examples will be analyzed in depth, to offer insight to the mathematical theory and its relation with real life situations.

Methods of Assessment: Assignments, tests and a final exam

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
Game theory has applications in economics, business, political science and biology, and undergraduate courses in game theory attract large numbers of students. This course adds to the suite of courses in applied mathematics, and will benefit students in the Major programs in Mathematics.

Consultation:
DCC Approval: Oct 9, 2018
RO Course Code Approval: October 5, 2018

Resources:
The course will be taught by existing faculty and will be cycled with other C and D-level courses. This course will not require TA support.

STAC33H3: Introduction to Applied Statistics

Description:

This course introduces students to statistical software, such as R and SAS, and its use in analyzing data. Emphasis will be placed on communication and explanation of findings. Students will be required to write a statistical report.

Prerequisites: STAB57H3 or STA248H3 or STA261H3

Corequisites:

Exclusions: STAC32H3

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
Students will be able to conduct appropriate statistical analyses using the software learned in the course and will be able to communicate their findings.
- Students will learn how to make and justify data-analytic decisions.
- Students will gain experience in organizing data to make it suitable for analysis.
- Students will learn about some computer-oriented statistical techniques (eg. bootstrap, randomization tests, Bayesian analysis using MCMC).
- Students will learn statistical programming skills.
- This course is part of the Methodology of the field of Statistics, and will allow students to see how the theoretical knowledge they gain from other courses applies to real-life data.

Topics Covered:
- introduction to operation of SAS and R
- reading in data from external files
- creating suitable data visualizations
- statistical inference using software
- how to judge whether standard procedures are appropriate and what to do instead
- regression, with model criticism and variable selection
- (one-way) analysis of variance, with model criticism
- case studies and interaction between statistics and the outside world
- writing reports and literate programming/reproducible research
- other computer-oriented techniques (eg. bootstrap or Bayesian analysis using MCMC)
- "tidying" to put data sets in appropriate form for analysis
- programming in R (and possibly SAS)

Methods of Assessment:
- weekly assignments, to keep students up to speed and to give a chance to practice getting and explaining importance of results
- final project, to give students a chance to work on an extended report on the analysis of a data set of their choice
- mid-term and final examinations, to test whether students individually have learned the crucial elements of coding and data analysis required to be a successful data analyst

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
STAC33H3 covers topics similar to STAC32H3 but is it has been tailored to meet the needs of students in the Major/Minor/Specialist programs in Statistics. Students in the Minor in Applied Statistics will continue to take STAC32H3.

Consultation:
DCC Approval: June 22, 2018
RO Approval: Sept 27, 2018

Resources:
The course will be taught by existing faculty as part of their regular teaching load.
TA support required for STAC32H3 will be split between the new STAC32H3 and STAC33H3. Therefore, the impact on required resources is thus expected to be minimal.

STAC53H3: Applied Data Collection

Description:

The principles of proper collection of data for statistical analysis, and techniques to adjust statistical analyses when these principles cannot be implemented. Topics include: relationships among variables, causal relationships, confounding, random sampling, experimental designs, observational studies, experiments, causal inference, meta-analysis. Statistical analyses using R.

Prerequisites: STAB27H3 or STAB57H3 or MGEB12H3 or PSYC08H3 or STA221H1 or STA248H1 or STA261H1

Corequisites:

Exclusions: STAC50H3, STA304H1, STA304H5

Recommended Preparation:

Enrolment Limits:

Note: Students enrolled in the Specialist or Major programs in Statistics should take STAC50H3.

Learning Outcomes:
The purpose of this course is to:
a) introduce commonly-used methods for data collection, including survey sampling, randomized experiments and observational studies;
b) provide training in critical thinking;
c) provide training in the implementation and communication of results from statistical and causal analyses.

Upon completion of the course students will be able to:
-Understand the common pitfalls in survey sampling
-Understand the relative advantages and disadvantages of various sampling designs
-Design survey methods that are efficient and less prone to biased results
-Formulate potential outcome and graphical models to represent subject- matter knowledge, and to define the causal contrasts of interest.
-Establish conditions under which causal contrasts are identifiable.
-Analyze causal diagrams to identify the settings where conventional statistical analysis is flawed.
-The objectives are directly related to the program objectives. Understanding the rationale and potential pitfalls in data collection are directly useful for students in applied statistics fields. It also prepares students for further study in data-driven fields.

Topics Covered:
Designs of surveys
  Common pitfalls in survey sampling
  Analysis of simple random sampling
  Analysis of stratified sampling
  Analysis of clustered sampling
  How to account for non-response in survey sampling
  How to account for biased responses in survey sampling
  Observational studies
  Estimand: Potential outcome framework
  Confounding bias
  Directed acyclic graph (a.k.a. Bayesian networks): d-separation
  Analysis of observational studies: matching, subclassification, weighting, regression, doubly
  robust methods

Methods of Assessment:
There will be three major assessments in this course: three assignments, a midterm test and a final exam.
-The assignments provide opportunities to practice the theory and methods learnt in class, and will contain practical projects whose solution requires use of statistical software. Each of these assignments counts towards 10% of the final grade.
- The midterm test will assess students' understanding of concepts and methods in survey sampling.
- The final exam is meant to be a comprehensive test of students' understanding of topics in survey sampling, randomized experiments and observational studies.
 Practice midterm and final exams will be provided. The tests and practice exams are meant to guide students in their learning, and will cover the most important topics in the course. We provide practice tests so that students can devote most of their energy towards the most important learning objectives.

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
STAC53H3 is primarily designed to be an Applied version of STAC50H3. STAC50H3 course attracts students with different backgrounds: those in the Specialist and Major programs in Statistics have a strong background in statistics and probability theory, but less experience using statistical software. For these students, STAC53H3 will provide them with rigorous training in the theory underlying statistical reasoning and teach the methodologies associated with current applications.Students in the Minor program in Applied Statistics have little to no exposure to formal mathematical proofs, but are more versed in the application and implementation of statistical methods, including the use of statistical software. For these students, this course will provide tools useful for their major of study.
Also, most of the current course offerings in the CMS department focus primarily on assessing statistical associations from data, while many real-world problems concern causal relationships. An ongoing trend in industry and academia is to go beyond association and assess causation, so that big data can be used to further scientific understanding and guide decision making. The proposed course reflects this trend by putting more emphasis on fundamental concepts and tools in causal inference. It will prepare students for industry and academic jobs by (1) equipping them with basic knowledge in the field; (2) training students in causal thinking, i.e. thinking critically about assertions on causality.

Consultation:
DCC Approval: October 9, 2018
RO Course Code Approval: October 5, 2018

Resources:
The course will be taught by existing faculty as part of their regular teaching load. The course will require TA support; this will be covered by the department's existing budget.
The course does not require any special infrastructure.

STAD80H3: Analysis of Big Data

Description:

Big data is transforming our world, revolutionizing operations and analytics everywhere, from financial engineering to biomedical sciences. Big data sets include data with high-dimensional features and massive sample size. This course introduces the statistical principles and computational tools for analyzing big data: the process of acquiring and processing large datasets to find hidden patterns and gain better understanding and prediction, and of communicating the obtained results for maximal impact. Topics include optimization algorithms, inferential analysis, predictive analysis, and exploratory analysis.

Prerequisites: STAC67H3 and CSCC11H3

Corequisites:

Exclusions:

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
This course will focus on promoting students' learning for three purposes: a) providing an overview of fundamental statistical learning principles and method in big data analytics, b) developing algorithmic skills needed for practical big data analysis in science and business analytics, and c) training students in approaching real-world problems using "statistical thinking with limited computational resources".
 Upon completion of the course students will be able to:
  Perform basic data operations with limited memory and hardware
  Graphically explore and investigate important and summary aspects of the data
  Understand the fundamental principles of statistical models
  Conduct statistical inferential analysis of big data
  Discover complex patterns for better predictions
  Design practical computational tools with limited resources
  Develop user-friendly statistical software packages
  Comprehend the trade-offs between statistical error and algorithmic complexity
  Communicate statistical ideas and analysis results effectively

Topics Covered:
1. Statistical models and fundamental principles
  Stochastic convergence and consistency
  Empirical risk minimization and prediction
  Likelihood principle, concentration principle and parsimonious principle
  Regression analysis and agnostic modeling
 2. Big data: high dimensional features
  High dimensional regression (Ridge, bridge, Lasso and Elastic-net)
  Bias-variance tradeoff
  Geometric interpretation of different shrinkage estimators
  High dimensional classification (Bayes rule and discriminant analysis)
 3. Big data: massive sample size
  Massive sample size regression and classification
  Distributed learning algorithm
  Online algorithm
  From full gradient descent to Hessian-free algorithm: coordinate descent and proximal gradient
  Parallel computing
 4. Big data: hidden and complex patterns
  Exploratory analysis and unsupervised learning
  Latent variable models: hidden Markov chains and mixture models
  Matrix models: factor models, SVD and matrix factorization
  Bagging and random forest
  Representation learning

Methods of Assessment:
There will be four major assessments in this course: course participation, weekly assignments, midterm test and a final project. The weekly assignment will support the course learning outcome of methodological and computational big-data-analytic skills. The midterm test will assess the students' understanding of fundamental statistical and algorithmic principles. The final course project will facilitate students' statistical and computational thinking, and will help students appreciate the interaction between statistics and optimization in real-world problems.
  Course Participation (20%): In each lecture, the instructor will provide a weekly lesson that focuses on the concepts, methodology, theory and toy examples for illustration. The students will have to write a lecture summary each week and submit to the instructor.
  Biweekly Assignments (30%): Biweekly assignments will strengthen the students' understanding of concepts, methodology and theory. Applications to real-world problems will also be an important part of the assignment problems. Students will gain hands-on experience in applying concepts and methodologies they learned in class to real-world data and applications. TAs will facilitate the session and provide technical aids if necessary.
  Term Test (20%): A term test will be given, covering topics completed in the first six weeks of the course.
  Final Course Project (30%): The final project will focus on a trending real world problem that can be tackled by combining the statistical and computational tools learned in this course. The final project will cover different themes of this course, namely a) statistical estimation, prediction and inference, b) fast computational algorithms with limited resources,

and c) finding hidden complex patterns that underpin the data generating mechanisms. Students will work in teams on open-ended problems using real-world data, practicing what they learned in class. Each team will have to submit a report, do an in-class presentation and provide feedback on other teams' reports.

Mode of Delivery: In Class

Breadth Requirements: Quantitative Reasoning

Rationale:
STAD80H3 will reinforce and expand the Statistics curriculum at UTSC, while also supporting other programs within CMS. More specifically, the course is designed to be an advanced course on big data science for third-year or fourth-year CMS students. The course will focus on analysis of big data, which is becoming a central problem in our society. It will help senior students learn integrated statistical inferential tools, machine learning techniques, modern optimization algorithms and how they interact with each other to attack large-scale real-world problems. This course will build up the Statistics Major and Specialist programs, and is complementary to the existing curriculum in these programs. Moreover, it will prepare senior students for industry and research jobs and equip them with basic knowledge in the field.

Consultation:
DCC Approval: Oct. 9, 2018
RO Course Code Approval: October 5, 2018

Resources:
The course will be taught by existing faculty as part of their regular teaching load. The course will require TA support; this will be covered by the department's existing budget. The course does not require any special infrastructure.

UNIVERSITY OF TORONTO SCARBOROUGH

2019-20 Curriculum Cycle
Undergraduate Minor Curriculum Modifications for Approval
Report: Department of Psychology
May 2, 2019

Psychology (UTSC), Department of

6 Minor Program Modifications:

MAJOR PROGRAM IN MENTAL HEALTH STUDIES (SCIENCE)

Enrolment Requirements

Enrolment in the Program is limited. Students may apply to the program after completing a minimum of 4.0 credits, including 1.0 credit in Psychology. Admission will require either :(1)a final grade of 67% 64% or higher in both of PSYA01H3 and PSYA02H3, or (2) a final grade of 60% or higher in both of PSYA01H3 and PSYA02H3, and a final grade of 72% or higher in two B-level psychology courses.

Application for admission will be made to the Office of the Registrar through ACORN, in April/May and July/August.

Completion Requirements:

Program Requirements

The program requires 7.0 credits, of which at least 2.0 credits must be at the C- or D-level:

1. Introduction to Psychology (1.0 credit) as follows:
PSYA01H3 Introduction to Biological and Cognitive Psychology
PSYA02H3 Introduction to Clinical, Developmental, Personality and Social Psychology

2. 0.5 credit from the following:
STAB22H3 Statistics I
STAB23H3 Introduction to Statistics for the Social Sciences
PSYB07H3 Data Analysis in Psychology
2. Laboratory Methods (1.0 credit):
[PSYB70H3 Methods in Psychological Science or (PSYB01H3) Psychological Research Laboratory or (PSYB04H3) Foundations in Psychological Research]
PSYC37H3 Psychological Assessment

3. 1.0 credit as follows:
[PSYB01H3 Psychological Research Laboratory or PSYB04H3 Foundations in Psychological Research]
PSYC37H3 Psychological Assessment
3. Statistical Methods (0.5 credit):
PSYB07H3 Data Analysis in Psychology
STAB22H3 Statistics I

STAB23H3 Introduction to Statistics for the Social Sciences

4. Personality and Clinical Psychology (**1.0 credit**) ~~as follows~~**:**
PSYB30H3 Introduction to Personality
PSYB32H3 Introduction to Clinical Psychology

5. Psychosocial and Psychobiological Breadth (1.5 credits):
 Students are required to take 1.0 credit from one group and ~~either the psycho-social grouping or the psycho-biological grouping listed below, as well as~~ 0.5 credit from the other group ~~(1.5 credits)~~:

Psycho-Social Grouping:
[PSYB38H3 or (PSYB45H3) Introduction to Behaviour Modification]
PSYC18H3 The Psychology of Emotion
PSYC35H3 Advanced Personality Psychology
PSYC36H3 Psychotherapy
PSYC39H3 Psychology and the Law

Psycho-Biological Grouping:
[PSYB55H3 Introduction to Cognitive Neuroscience or (PSYB65H3) Human Brain and Behaviour]
PSYB64H3 Introduction to Physiological Psychology
PSYC31H3 Clinical Neuropsychology
PSYC33H3 Neuropsychological Rehabilitation
PSYC62H3 Drugs and the Brain

6. Seminar in Psychology ~~0.5 credit~~ **at the D-level (0.5 credits)**

7. Additional ~~1.5 additional~~ **credits in Psychology (1.5 credits)**

 Supervised study [PSYC90H3 or PSYC93H3] or thesis [PSYD98H3] courses may be used to fulfill a maximum of 0.5 credit.

Description of Proposed Changes:
1 - Increasing the grade requirement for admission requirement from 64% to 67%.
2 - Changing requirement 1 label to "Introduction to Psychology ":
3 - Changing requirement 2 label to "Laboratory Methods" and increasing credit by 0.5. PSYB70H3 and PSYC70H3 replace PSYB01H3 and PSYB04H3.
4 - Changing requirement 3 label to "Statistical Methods" and re-ordering course order.
5 - Changing requirement 4 label to "Personality and Clinical Psychology".
6 - Changing requirement 5 label to "Psychosocial and Psychobiological Breadth". Simplify the language for this requirement and updating course code and course title for PSYB45H3 (now PSYB38H3).
7 - Changing requirement 6 label to "Seminar in Psychology at the D-level"
8- Changing requirement 7 label to "Additional credits in Psychology".

Rationale:
1 - Increasing the grade requirement for admission into the program is the second step of a multi-year process as outlined in the department's academic plan. The change is motivated by the volume of students in this program exceeding the ability to service the courses they want or require. With a gradual increase in admissions average over time, the program expects the volume to decrease, improving the ability to effectively serve the students in this program. Students will continue to have a second entry option to this program if they are not successful with getting the increased grade requirement in PSYA01H3 and PSYA02H3.
2 -Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.
3- Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. PSYB01H3 and PSYB04H3 are being replaced by PSYB70H3 which provides students with better research skills at the B-level. The increase of 0.5 credits to this program requirement is due to the addition of the new PSYC70H3 course , which provides students with better research skills at the C-level.
4 - Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. Re-ordering stats

courses to ensure they are in alphabetical and numerical order.

5 - Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

6 - Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. Simplifying the language to ensure it is easy to understand and read. Changing PSYB45H3 course code and title to PSYB38H3 is necessary to ensure consistency throughout the Calendar.

7 - Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

8 - Changing the label will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

Impact:
New students who want to enter into the program at the end of their first year will need to meet the revised admission average. Note: the second pathway into the program remains unchanged. No impact on continuing students.

Consultation: DCC Approval: September 20th, 2018.

Resource Implications: None

MAJOR PROGRAM IN PSYCHOLOGY (SCIENCE)

Enrolment Requirements

Enrolment in the Program is limited. Students may apply to the program after completing a minimum of 4.0 credits, including 1.0 credit in psychology. Admission will require either :(1)a final grade of 67% 64% or higher in both PSYA01H3 and PSYA02H3, or (2) a final grade of 60% or higher in both PSYA01H3 and PSYA02H3, and a final grade of 72% or higher in two B-level psychology courses.

Application for admission will be made to the Office of the Registrar through ACORN, in April/May and July/August.

Completion Requirements:

Program Requirements

The Program requires completion of 7.0 credits, of which at least 2.0 credits must be at the C- or D-level:

1. Introduction to Psychology (1.0 credit) as follows:
PSYA01H3 Introduction to Biological and Cognitive Psychology
PSYA02H3 Introduction to Clinical, Developmental, Personality and Social Psychology

2. Laboratory Methods (0.5 credit) from the following:
[PSYB70H3 Methods in Psychological Science or (PSYB01H3) Psychological Research Laboratory or (PSYB04H3) Foundations in Psychological Research]

3. Statistical Methods (0.5 credit) from the following:
[PSYB07H3 Data Analysis in Psychology or STAB22H3 Statistics I or (recommended)
STAB23H3 Introduction to Statistics for the Social Sciences]
PSYB07H3 Data Analysis in Psychology

4. Breadth in Psychology 2.5 credits at the B-level and C-level (2.5 credits)
Students are required to take 1.5 2.0 credits at the B-level or C-level from one of the two content groups listed below and 1.0 0.5 credit from the other group:
a. Social and Developmental (courses listed in the 10- and 20-series)
b. Perception, Cognition and Physiology (courses listed in the 50- and 60-series)

5. Seminar in Psychology 0.5 PSY credit at the D-level (0.5 credit)
Certain D-level NRO courses may be used to fulfill this requirement with departmental the approval of the Supervisor of Studies.

6. Additional ~~2.0 additional~~ credits in Psychology (2.0 credits)
 Of the 2.0 credits, at least ~~of which~~ 1.0 credit must be at the C-level. Supervised study [PSYC90H3 or PSYC93H3] or thesis [PSYD98Y3] courses may be used to fulfill a maximum of 0.5 credit.

Description of Proposed Changes:
1 - Increasing the grade requirement for admission requirement 1 from 64% to 67%.
2 - Changing requirement 1 label to "Introduction to Psychology".
3 - Changing requirement 2 label to "Laboratory Methods. Replace PSYB01H3 and PSYB04H3 with the new required course PSYB70H3. Decreasing credit requirement by 0.5.
4 - Changing requirement 3 label to "Statistical Methods". "Recommended" removed from STAB22H3
5 - Changing requirement 4 label to "Breadth in Psychology at the B-level and C-level". Increasing credit requirement by 0.5
6 - Changing requirement 5 label to "Seminar in Psychology at the D-level". Simplify the language in requirement 5.

Rationale:
1 - Increasing the grade requirement for admission is the second step of a multi-year process as outlined in the department's academic plan. The change is motivated by the volume of students in this program exceeding the ability to service the courses they want or require. With a gradual increase in admissions average over time, the program expects the volume to decrease, improving the ability to effectively serve the students in this program. Students will continue to have a second entry option if they are not successful with getting the increased grade requirement in PSYA01H3 and PSYA02H3.
2 - Changing label for requirement 1 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.
3 - Changing label for requirement 2 is to ensure consistency with the other relevant departmental programs. All retired courses require brackets to ensure consistency throughout the Calendar. PSYB70H3 replaces PSYB01H3 and PSYB04H3 because it provides students with enhanced research skills at the B-level. Decreasing program requirement credit by 0.5 credits since only one 0.5 credit B-level course is now applicable to this program requirement.
4 - Changing requirement 3 label s ensuring consistency with other departmental programs. Removing the word "recommended" from this requirement to align better with admission the requirements and allow flexibility with movement between PSY programs.
5 - Changing label for requirement 6 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. Increasing 0.5 credit is necessary to re-balance the 0.5 decrease from requirement 2.
6 - Changing label for requirement 6 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. Simplifying language to ensure it is clear to understand for students in the program.

Impact:
New students who want to enter into the program at the end of their first year will need to meet the revised admission average. Note: the second pathway into the program remains unchanged. No impact on continuing students.

Consultation: DCC Approval: September 20th, 2018.

Resource Implications: None

SPECIALIST (CO-OPERATIVE) PROGRAM IN MENTAL HEALTH STUDIES (SCIENCE)

Enrolment Requirements

 The minimum qualifications for entry are 4.0 credits including PSYA01H3 and PSYA02H3 plus a cumulative GPA of at least 2.75. Grades in both of PSYA01H3 and PSYA02H3 must be 75% ~~72%~~ or higher.

 Current Co-op Students:

 Students admitted to a Co-op Degree POSt in their first year of study must request a Co-op Subject POSt on ACORN upon completion of 4.0 credits and must meet the minimum qualifications for entry as noted above. Students who have completed 10.0 credits or more, are not eligible to apply to the program.

Students currently enrolled in the Specialist Co-op Program in Mental Health Studies who have completed 10.0 credits or more, are not eligible to transfer to the Specialist Co-op Program in Psychology or vice-versa.

Prospective Co-op Students:

In addition to requesting the program on ACORN, prospective Co-op students (i.e., those not yet admitted to a Co-op Degree POSt) must also submit a Co-op Supplementary Application Form, which is available from the Arts & Science Co-op Office [Arts and Science Co-op Office](http://www.utsc.utoronto.ca/askcoop/future-co-op-students) (http://www.utsc.utoronto.ca/askcoop/future-co-op-students). Submission deadlines follow the Limited Enrolment Program Application Deadlines set by the Office of the Registrar each year. Failure to submit both the Supplementary Application Form and the program request on ACORN will result in that student's application not being considered.

Completion Requirements:

Program Requirements

The program requires 12.5 credits as follows, including at least 4.0 credits at the C-level, of which at least 1.0 credit must be at the D-level:

1. Introduction to Psychology (1.0 credit)
PSYA01H3 Introduction to Biological and Cognitive Psychology
PSYA02H3 Introduction to Clinical, Developmental, Personality and Social Psychology

~~**2. Statistical Methods (1.0 credit)**~~
~~PSYB07H3 Data Analysis in Psychology~~
~~[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]~~
2. Laboratory Methods (2.0 credits)
[PSYB70H3 Methods in Psychological Science or (PSYB01H3) Psychological Research Laboratory]
PSYC70H3 Advanced Research Methods Laboratory
PSYC73H3 Clinical Neuropsychology Laboratory
PSYC37H3 Psychological Assessment

~~**3. Laboratory Methods (1.5 credits)**~~
~~PSYB01H3 Psychological Research Laboratory~~
~~PSYC32H3 Clinical Neuropsychology Laboratory~~
~~PSYC37H3 Psychological Assessment~~
3. Statistical Methods (1.0 credit)
PSYB07H3 Data Analysis in Psychology
[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]

4. PSYC02H3 Scientific Communication in Psychology (0.5 credit)

5. PSYC85H3 History of Psychology (0.5 credit)

6. Personality and Clinical Psychology (1.0 credit) ~~as follows~~:
PSYB30H3 Introduction to Personality
PSYB32H3 Introduction to Clinical Psychology

7. Psychosocial and Psychobiological Breadth (3.0 credits)
Students are required to take 2.0 credits from one group and ~~either the psycho-social grouping or the psycho-biological grouping listed below, as well as~~ 1.0 credit from the other group ~~grouping (3.0 credits)~~:

Psycho-Social Grouping
[PSYB38H3 or (PSYB45H3) Introduction to Behaviour Modification]
PSYC18H3 The Psychology of Emotion
PSYC35H3 Advanced Personality Psychology
PSYC36H3 Psychotherapy
PSYC39H3 Psychology and the Law

Psycho-Biological Grouping
[PSYB55H3 Introduction to Cognitive Neuroscience or (PSYB65H3) Human Brain and Behaviour]
PSYB64H3 Physiological Psychology
PSYC33H3 Neuropsychological Rehabilitation
PSYC62H3 Drugs and the Brain

8. Seminars in Psychology ~~1.0 credit~~ **at the D-level (1.0 credit):**
~~with at least~~ 0.5 credit must come from the PSY D30-series ~~following list~~:
PSYD30H3 Current topics in Personality Psychology
PSYD31H3 Cultural-Clinical Psychology
PSYD32H3 Personality Disorders
PSYD33H3 Current topics in Clinical Psychology
PSYD35H3 Clinical Psychopharmacology
PSYD39H3 Cognitive Behavioural ~~Behaviorial~~ Therapy

9. An Additional ~~additional 1.0~~ **credit in Psychology (0.5 credit)**

10. 2.0 credits from the following courses:
HLTB40H3 Health Policy and Health Systems
HLTB41H3 Introduction to the Social Determinants of Mental Health
HLTB42H3 Perspectives of Culture, Illness and Healing
HLTB50H3 Introduction to Health Humanities
(HLTC05H3) Society, Health and Illness
HLTC22H3 Health, Aging, and the Life Cycle
HLTC23H3 Issues in Child Health and Development
HLTC42H3 Emerging Health Issues and Policy Needs
IDSB04H3 Introduction to International/Global Health
IDSC11H3 Issues in Global and International Health
LINB20H3 Sociolinguistics
PHLA11H3 Introduction to Ethics
PHLB07H3 Ethics
PHLB09H3 Biomedical Ethics
PHLB81H3 Theories of Mind
PHLC07H3 Death and Dying
PHLC10H3 Topics in Bioethics
SOCB22H3 Sociology of Gender
SOCB49H3 Sociology of Family
SOCB50H3 Deviance and Normality I

Co-op Work Term Requirements

Students must satisfactorily complete two Co-op work terms, each of four-months duration. To be eligible for their first work term, students must be enrolled in the Specialist Co-op Program in Mental Health Studies and have completed at least 10.0 credits, including [PSYB70H3 or (PSYB01H3)], PSYB07H3, PSYB32H3, [PSYB55H3 or (PSYB65H3)], PSYC02H3, [PSYC08H3 or PSYC09H3], and [PSYC73H3 or (PSYC32H3)].

In addition to their academic program requirements, Co-op students complete up to four Co-op specific courses. These courses are designed to prepare students for their job search and work term experience, and to maximize the benefits of their Co-op work terms. They cover a variety of topics intended to assist students in developing the skills and tools required to secure work terms that are appropriate to their program of study, and to perform professionally in the workplace. These courses must be completed in sequence, and are taken in addition to a full course load. They are recorded on transcripts as credit/no credit (CR/NCR) and are considered to be additive credit to the 20.0 required degree credits. No additional course fee is assessed as registration is included in the Co-op Program fee.

Co-op Preparation Course Requirements:

1. COPB50H3/(COPD01H3) – Foundations for Success in Arts & Science Co-op
- Students entering Co-op from outside of UTSC (high school or other postsecondary) will complete this course in Fall or Winter ~~fall~~ of their first year at UTSC. Enrolment in each section is based on admission category: Typically, students in Computer Science, Mathematics and Statistics enroll in the Fall semester while all other Arts & Science Co-op admission categories enroll in the Winter semester however this may vary year to year.
- Current UTSC students entering Co-op in April/May will complete this course in the Summer semester. ~~summer term~~
- Current UTSC students entering Co-op in July/August will complete this course in the Fall semester. ~~fall term~~

2. COPB51H3/(COPD03H3) – Preparing to Compete for your Co-op Work Term
- ~~Prerequisite: COPD01H3~~
- This course will be completed eight months in advance of the first scheduled work term.

3. COPB52H3/(COPD11H3) – Managing your Work Term Search & Transition to Work
- ~~Prerequisite: COPD03H3~~
- This course will be completed four months in advance of the first work scheduled work term.

4. COPC98H3/(COPD12H3) – Integrating Your Work Term Experience Part I
- This course will be completed four months in advance of the second scheduled ~~Prerequisite: COPD11H3 and one Co-op~~ work term.

5. COPC99H3/(COPD13H3) – Integrating Your Work Term Experience Part II
- This course will be completed four months in advance of the third ~~second~~ scheduled work term (for programs that require the completion of 3 work terms and/or four months in advance of any additional work terms that have been approved by the Arts and Science Co-op Office.

Students must be available for work terms in each of the Fall, Winter and Summer semesters ~~sessions~~ and must complete at least one of their required work terms in either a Fall or Winter semester ~~session~~. This, in turn, requires that students take courses during at least one Summer semester ~~session~~.

For information on fees, status in Co-op programs, and certification of completion of Co-op programs, see Section 6B.5 or the Arts and Science Co-op section in ~~of~~ the UTSC *Calendar~~.~~ .*

Description of Proposed Changes:
1 - Increasing the grade requirement for admission from 72% to 75%
2 - Changing requirement 2 label to "Laboratory Methods".
3 - PSYB01H3 and PSYB04H3 are being replaced by the new courses (PSYB70H3 and PSYC70H3). The new advanced research methods course has been added to requirement 2, increasing the total credit count to 2.0 credits.
4 - Changing requirement 6 label to "Personality and Clinical Psychology"
5 - Changing requirement 7 label to "Psychosocial and Psychobiological breadth" and also changing course title for PSYB64H3.
6 - Changing course code for PSYB45H3 to PSYB38H3 in requirement 7.
7 - Changing requirement 8 label to "Seminar at the D-level"
8- Additional credits in Psychology: reduced to 0.5 from 1.0 to account for PSYC70H3 being added to a previous program requirement (total number of requirements for the program is unchanged)
9 - Requirement 10 has added HLTB42H3: Perspectives of Culture, Illness and Healing, PHLC07H3: Death and Dying, PHLC10H3: Topics in Bioethics are being added as options.
10 - Adding brackets around PSYB01H3, and adding PSYB70H3 to the co-op work requirement list.
11 - Updating course codes in Co-op Prep Course Requirements area.

Rationale:
1 - Increasing the grade requirement for admission into the program is the second step of a multi-year process as outlined in the department's academic plan. The change is motivated by the volume of students in this program exceeding the ability to service the courses they want or require. With a gradual increase in admissions average over time, the program expects the volume to decrease, improving the ability to effectively serve the students in this program. Students will continue to have a second option of entry to the program if they are not successful with getting the increased grade requirement in PSYA01H3 and PSYA02H3.
2 - Changing the label for requirement 2 to "Laboratory Methods" will provide students a clearer indication of the courses

that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

3 - PSYB70H3 and PSYC70H3 are replacing PSYB01H3 and PSYB04H3. The new courses are more relevant and provide students better exposure to research methods in the program.

4 - Changing the label for requirement 6 to "Personality and Clinical Psychology" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

5- Changing the label for requirement 7 to "Psychosocial and Psychobiological breadth" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. PSYB64H3 course title has been changed, to ensure consistency throughout the Calendar, it is necessary to update course titles for all impacted programs.

6 - The course code has been changed and to ensure consistency throughout the Calendar, course code update is necessary for all impacted programs.

7 - Changing the label for requirement 8 to "Seminar at the D-level" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

8 - Requirement 9 has reduced the credit requirement from 1.0 to 0.5 because additional 0.5 credit has been added to requirement 2.

9 - HLTB42H3 and PHLC07H3 and PHLC10H3 will provide more options for students to complete requirement 10.

10 - PSYB01H3 has been replaced by PSYB70H3, to ensure consistency with this change the course change is also necessary

11 - These changes are editorial only to acknowledge the addition of Co-op Work Prep and Work Term courses to the Calendar.

Impact:
New students who want to enter into the program at the end of their first year will need to meet the revised admission average. Note: the second pathway into the program remains unchanged.

Consultation:
DCC Approval: September 20th, 2018.
Departments of Philosophy and Health Studies consulted on October 12th, 2018.

Resource Implications: None

SPECIALIST (CO-OPERATIVE) PROGRAM IN PSYCHOLOGY (SCIENCE)

Enrolment Requirements

The minimum qualifications for entry are 4.0 credits including PSYA01H3 and PSYA02H3 plus a cumulative GPA of at least 2.75. Grades in both PSYA01H3 and PSYA02H3 must be 75% 72% or higher.

Current Co-op Students:

Students admitted to a Co-op Degree POSt in their first year of study must request a Co-op Subject POSt on ACORN upon completion of 4.0 credits and must meet the minimum qualifications for entry as noted above. Students who have completed 10.0 credits or more, are not eligible to apply to the program.

Students currently enrolled in the Specialist Co-op Program in Psychology who have completed 10.0 credits or more, are not eligible to transfer to the Specialist Co-op Program in Mental Health Studies or vice-versa.

Prospective Co-op Students:

In addition to requesting the program on ACORN, prospective Co-op students(i.e., those not yet admitted to a Co-op Degree POSt)must also submit a Co-op Supplementary Application Form, which is available from the Arts & Science Co-op Office Arts and Science Co-op Office (http:// www.utsc.utoronto.ca/askcoop/future-co-op-students). Submission deadlines follow the Limited Enrolment Program Application Deadlines set by the Office of the Registrar each year. Failure to submit both the Supplementary Application Form and the program request on ACORN will result in that student's application not being considered.

Completion Requirements:

Program Requirements

The program requires students to complete a total of 12.5 credits, including at least 4.0 credits at the C- or D-level, of which at 1.0 credit must be at the D-level:

1. Introduction to Psychology (1.0 credit)
PSYA01H3 Introduction to Biological and Cognitive Psychology
PSYA02H3 Introduction to Clinical, Developmental, Personality and Social Psychology

~~**2. Statistical Methods (1.0 credit**)~~
~~PSYB07H3 Data Analysis in Psychology~~
~~[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]~~
2. Laboratory ~~Statistical~~ Methods (1.5 credits)
[PSYB70H3 Methods in Psychological Science or (PSYB01H3) Psychological Research Laboratory]
PSYC70H3 Advanced Research Methods Laboratory
and 0.5 credit from among the following:
[PSYC71H3 or (PSYC11H3) Social Psychology Laboratory]
[PSYC72H3 or (PSYC26H3) Developmental Psychology Laboratory]
[PSYC74H3 or (PSYC05H3) Human Movement Laboratory]
[PSYC75H3 or (PSYC58H3) Cognitive Psychology Laboratory]
[PSYC76H3 or (PSYC04H3) Brain Imaging Laboratory]
PSYC06H3 Psychophysiology Laboratory

~~**3. Laboratory Methods (1.0 credit)**~~
~~PSYB01H3 Psychological Research Laboratory~~
~~and~~
~~0.5 credit from among the following:~~
~~PSYC04H3 Brain Imaging Laboratory~~
~~PSYC05H3 Human Movement Laboratory~~
~~PSYC06H3 Psychophysiology Laboratory~~
~~PSYC11H3 Social Psychology Laboratory~~
~~PSYC26H3 Developmental Psychology Laboratory~~
~~PSYC58H3 Cognitive Psychology Laboratory~~
~~NROC63H3 Neuroscience Laboratory~~
3. Statistical Methods (1.0 credit)
PSYB07H3 Data Analysis in Psychology
[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]

4. PSYC02H3 Scientific Communication in Psychology (0.5 credit)

5. PSYC85H3 History of Psychology (0.5 credit)

6. Breadth in Psychology ~~5.0 credits~~ at the B-level and C-level (5.0 credits)
Students are required to take 3.0 credits at the B-level or C-level from one of the two content groups listed below and 2.0 credits from the other group:
(a) Social and Developmental (courses listed in the 10- and 20-series)
(b) Perception, Cognition and Physiology (courses listed in the 50- and 60-series)

7. Seminars in Psychology ~~1.0 credit~~ at the D-level (1.0 credit)
Students must take 0.5 credit from each grouping below ~~of the groupings listed~~:
(a) Social and Developmental (courses listed in the 10- and 20-series)
(b) Perception, Cognition and Physiology (courses listed in the 50- and 60-series)
~~Group One~~
~~PSYD11H3 Psychology of Interpersonal Relationships~~
~~PSYD12H3 Social Psychology of the Self~~
~~PSYD13H3 Psychology of Emotion Regulation~~
~~PSYD14H3 Psychology of Morality~~

PSYD15H3 Current Topics in Social Psychology
PSYD16H3 Critical Analysis in Psychology
PSYD18H3 Psychology of Gender
PSYD20H3 Current Topics in Psychology
PSYD22H3 Socialization Processes

Group Two
PSYD34H3 Human Intelligence
PSYD50H3 Current Topics Memory Cognition
PSYD51H3 Current Topics in Perception
PSYD54H3 Current Topics in Visual Recognition
PSYD66H3 Current Human Brain Topics Behaviour

8. Additional 2.5 additional credits in Psychology (2.0 credits)
Of Students must choose 2.5 further credits from any of the remaining courses in Psychology. In selecting the 2.0 credits, at least 1.0 credit must be at the C-level. Supervised study [PSYC90H3 or PSYC93H3] or thesis [PSYD98H3] courses may be used to fulfill a maximum of 0.5 credit.

Co-op Work Term Requirements

Students must satisfactorily complete two Co-op work terms, each of four-months duration. To be eligible for their first work term, students must be enrolled in the Specialist Co-op Program in Psychology and have completed at least 10.0 credits, including [PSYB70H3 or (PSYB01H3)], PSYB07H3, PSYC02H3 and [PSYC08H3 or PSYC09H3].

In addition to their academic program requirements, Co-op students complete up to four Co-op specific courses. These courses are designed to prepare students for their job search and work term experience, and to maximize the benefits of their Co-op work terms. They cover a variety of topics intended to assist students in developing the skills and tools required to secure work terms that are appropriate to their program of study, and to perform professionally in the workplace. These courses must be completed in sequence, and are taken in addition to a full course load. They are recorded on transcripts as credit/no credit (CR/NCR) and are considered to be additive credit to the 20.0 required degree credits. No additional course fee is assessed as registration is included in the Co-op Program fee.

Co-op Preparation Course Requirements:

1. COPB50H3/(COPD01H3) – Foundations for Success in Arts & Science Co-op
- Students entering Co-op from outside of UTSC (high school or other postsecondary) will complete this course in Fall or Winter fall of their first year at UTSC. Enrolment in each section is based on admission category: Typically, students in Computer Science, Mathematics and Statistics enroll in the Fall semester while all other Arts & Science Co-op admission categories enroll in the Winter semester however this may vary year to year.
- Current UTSC students entering Co-op in April/May will complete this course in the Summer semester. summer term
- Current UTSC students entering Co-op in July/August will complete this course in the Fall semester. fall term

2. COPB51H3/(COPD03H3) – Preparing to Compete for your Co-op Work Term
- Prerequisite: COPD01H3
- This course will be completed eight months in advance of the first scheduled work term.

3. COPB52H3/(COPD11H3) – Managing your Work Term Search & Transition to Work
- Prerequisite: COPD03H3
- This course will be completed four months in advance of the first work scheduled work term.

4. COPC98H3/(COPD12H3) – Integrating Your Work Term Experience Part I
- This course will be completed four months in advance of the second scheduled Prerequisite: COPD11H3 and one Co-op work term.

5. COPC99H3/(COPD13H3) – Integrating Your Work Term Experience Part II
- This course will be completed four months in advance of the third second scheduled work term (for programs that require the completion of 3 work terms and/or four months in advance of any additional work terms that have been approved by the Arts and Science Co-op Office.

Students must be available for work terms in each of the Fall, Winter and Summer semesters ~~sessions~~ and must complete at least one of their required work terms in either a Fall or Winter semester ~~session~~. This, in turn, requires that students take courses during at least one Summer semester ~~session~~.

For information on fees, status in Co-op programs, and certification of completion of Co-op programs, see Section 6B.5 or the Arts and Science Co-op section in ~~of~~ the UTSC *Calendar*.

Description of Proposed Changes:
1 - Increasing the grade requirement for admission from 72% to 75%.
2 - Requirement 2: increased total credit count by 0.5 credits, added PSYC70H3 as a required course, replaced PSYB01H3 with the required course PSYB70H3, changed all lab courses in PSY and bracketed old course codes and removed NROC63H3 course as option.
3 - Switched requirement 2 label with requirement 3 label.
4 - Requirement 6 label changed to "Breadth in Psychology at the B-level and C-level"
5 - Requirement 7 label changed to "Seminars in Psychology at the D-level" and language reworded.
6 - Requirement 8 label changed to "Additional credits in Psychology", and also reduced credit by 0.5
7 - Co op work terms requirement adding PSYB70H3 and adding brackets around PSYB01H3 and PSYB4H3
8 - editorial changes to the Co-op Work Term Requirements area

Rationale:
1 - Increasing the grade requirement for admission into the program is the second step of a multi-year process as outlined in the department's academic plan. The change is motivated by the volume of students in this program exceeding the ability to service the courses they want or require. With a gradual increase in admissions average over time, the program expects the volume to decrease, improving the ability to effectively serve the students in this program. Students will continue to have a second entry option if they are not successful with getting the increased grade requirement in PSYA01H3 and PSYA02H3.
2 - Requirement 2: increased 0.5 credit by the addition of the new required course PSYC70H3 because this course provide students with enhanced research skills at the C-level. Replaced PSYB01H3 with the new PSYB70H3 course because this course provides students with enhanced research skills at the B-level. All older lab course codes require brackets with the new course code update to ensure consistency throughout the Calendar. NROC63H3 is being removed since this course typically reaches max capacity with neuroscience students and is therefore not accessible to students in this program.
3 - Switching requirement 2 label with requirement 3 label is necessary to ensure consistency with the other departmental programs
4 - Changing label for requirement 6 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.
5 - Changing label for requirement 7 and re working the language will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.
6 - Changing label for requirement 8 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. Reduction of 0.5 credit is necessary since 0.5 credit has been added to requirement 2.
7 - All retired courses codes require brackets and updated with the new course code to ensure consistency throughout the Calendar.
8 - These changes are editorial only to acknowledge the addition of Co-op Work Prep and Work Term courses to the Calendar.

Impact:
New students who want to enter into the program at the end of their first year will need to meet the revised admission average.
No impact on continuing students.

Consultation: DCC Approval: September 20th, 2018.

Resource Implications: None

SPECIALIST PROGRAM IN MENTAL HEALTH STUDIES (SCIENCE)

Enrolment Requirements

Enrolment in the Program is limited. Students may apply to the program after completing a minimum of 4.0 credits, including 1.0 credit in Psychology. Admission will require either :(1)a final grade of 75% ~~72%~~ or higher in both PSYA01H3 and PSYA02H3, or (2) a final grade of 64% or higher in both PSYA01H3 and PSYA02H3, and a final grade of 72% or higher in [PSYB70H3 or (PSYB01H3)] and[PSYB07H3 or equivalent].

Application for admission will be made to the Office of the Registrar through ACORN, in April/May and July/August.

Completion Requirements:

Program Requirements
The program requires completion of 12.5 credits as follows, including at least 4.0 credits at the C- or D-level, of which at least 1.0 must be at the D-level:

1. Introductory Psychology (1.0 credit)
PSYA01H3 Introduction to Biological and Cognitive Psychology
PSYA02H3 Introduction to Clinical, Developmental, Personality and Social Psychology

~~**2. Statistical Methods (1.0 credit)**~~
~~PSYB07H3 Data Analysis in Psychology~~
~~[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]~~
2. Laboratory Methods (1.5 credit)
[PSYB70H3 Methods in Psychological Science or (PSYB01H3) Psychological Research Laboratory]
PSYC70H3 Advanced Research Methods Laboratory
PSYC37H3 Psychological Assessment

~~**3. Laboratory Methods (1.0 credit)**~~
~~PSYB01H3 Psychological Research Laboratory~~
~~PSYC37H3 Psychological Assessment~~
3. Statistical Methods (1.0 credit)
PSYB07H3 Data Analysis in Psychology
[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]

4. PSYC02H3 Scientific Communication in Psychology (0.5 credit)

5. PSYC85H3 History of Psychology (0.5 credit)

6. Personality and Clinical Psychology (1.0 credit) ~~as follows~~:
PSYB30H3 Introduction to Personality
PSYB32H3 Introduction to Clinical Psychology

7. Psychosocial and Psychobiological Breadth (3.0 credits)
Students are required to take 2.0 credits from one group and 1.0 credit from the other group ~~either the psycho-social grouping or the psycho-biological grouping listed below, as well as grouping (3.0 credits)~~:

Psycho-Social Grouping
[PSYB38H3 or (PSYB45H3) Introduction to Behaviour Modification]
PSYC18H3 The Psychology of Emotion
PSYC35H3 Advanced Personality Psychology
PSYC36H3 Psychotherapy
PSYC39H3 Psychology and the Law

Psycho-Biological Grouping
[PSYB55H3 Introduction to Cognitive Neuroscience or (PSYB65H3) Human Brain and Behaviour]
PSYB64H3 Introduction to Physiological Psychology

PSYC31H3 Clinical Neuropsychology
PSYC33H3 Neuropsychological Rehabilitation
PSYC62H3 Drugs and the Brain

8. Seminars in Psychology ~~1.0 credit~~ **at the D-level (1.0 credit):**
0.5 credit must come from the PSY D30-series ~~, with at least following~~:
PSYD30H3 Current topics in Personality Psychology
PSYD31H3 Cultural-Clinical Psychology
PSYD32H3 Personality Disorders
PSYD33H3 Current topics in Clinical Psychology
PSYD35H3 Clinical Psychopharmacology
PSYD39H3 Cognitive Behavioural ~~Behaviorial~~ Therapy

9. Additional ~~1.5 additional~~ **credits in Psychology (1.0 credits)**

10. 2.0 credits from the following courses:
HLTB40H3 Health Policy and Health Systems
HLTB41H3 Introduction to the Social Determinants of Health
HLTB42H3 Perspectives of Culture, Illness and Healing
HLTB50H3 Introduction to Health Humanities
(HLTC05H3) Society, Health and Illness
HLTC22H3 Health, Aging, and the Life Cycle
HLTC23H3 Issues in Child Health and Development
HLTC42H3 Emerging Health Issues and Policy Needs
IDSB04H3 Introduction to International/Global Health
IDSC11H3 Issues in Global and International Health
LINB20H3 Sociolinguistics
PHLA11H3 Introduction to Ethics
PHLB07H3 Ethics
PHLB09H3 Biomedical Ethics
PHLB81H3 Theories of Mind
PHLC07H3 Death and Dying
PHLC10H3 Topics in Bioethics
SOCB22H3 Sociology of Gender
SOCB49H3 Sociology of Family
SOCB50H3 Deviance and Normality I

Description of Proposed Changes:
1 - Increasing the grade requirement for admission from 72% to 75%
2 - Changing requirement 2 label to "Laboratory Methods".
3 - PSYB01H3 and PSYB04H3 are being replaced by new courses (PSYB70H3 and PSYC70H3). The new advanced research methods course has been added to requirement 2, therefore, also increasing the credit count to 2.0 credits in requirement 2.
4 - Changing requirement 6 label to "Personality and Clinical Psychology"
5 - Changing requirement 7 label to "Psychosocial and Psychobiological Breadth" also changing course title for PSYB64H3.
6 - Changing course code for PSYB45H3 to PSYB38H3 in requirement 7.
7 - Changing requirement 8 label to "Seminar at the D-level"
8- Additional credits in Psychology - reduced to 0.5 from 1.0 to account for PSYC70H3 being to the previous requirement
9 - Requirement 10 has added HLTB42H3: Perspectives of Culture, Illness and Healing, PHLC07H3: Death and Dying, PHLC10H3: Topics in Bioethics as options
10 - Adding brackets around PSYB01H3, and adding PSYB70H3 to the co-op work requirement list.

Rationale:
1 - Increasing the grade requirement for admission into the program is the second step of a multi-year process as outlined in the department's academic plan. The change is motivated by the volume of students in this program exceeding the ability to service the courses they want or require. With a gradual increase in admissions average over time, the program expects the volume to decrease, improving the ability to effectively serve the students in this program. Students will continue to have a second entry option to this program if they are not successful at earning the increased grade requirement in PSYA01H3 and

PSYA02H3.

2 - Changing the label for requirement 2 to "Laboratory Methods" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

3 - PSYB70H3 and PSYC70H3 are replacing PSYB01H3 and PSYB04H3. These new course are more relevant and provide students better exposure to research methods in this program.

4 - Changing the label for requirement 6 to "Personality and Clinical Psychology" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

5- Changing the label for requirement 7 to "Psychosocial and Psychobiological Breadth" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. PSYB64H3 course title has been changed, to ensure consistency throughout the Calendar, it is necessary to update the course title for all impacted programs.

6 - The course code has been changed, to ensure consistency throughout the Calendar, course code update is necessary in all impacted programs.

7 - Changing the label for requirement 8 to "Seminar at the D-level" will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

8 - Requirement 9 has reduced credit requirement from 1.0 to 0.5 because the additional 0.5 credit has been added to requirement 2.

9 - HLTB42H3 and PHLC07H3 and PHLC10H3 will provide more options for students to complete requirement 10.

10 - PSYB01H3 has been replaced by PSYB70H3, to ensure consistency within the program.

Impact:
New students who want to enter into the program at the end of their first year will need to meet the revised admission average. Note: the second pathway into the program remains unchanged. No impact on continuing students.

Consultation:
DCC Approval: September 20th, 2018.
Departments of Philosophy and Health Studies consulted on October 12th, 2018.

Resource Implications: None.

SPECIALIST PROGRAM IN PSYCHOLOGY (SCIENCE)

Enrolment Requirements
Enrolment in the Program is limited. Students may apply to the program after completing a minimum of 4.0 credits, including 1.0 credit in psychology. Admission will require either :(1)a final grade of 75% 72% or higher in both PSYA01H3 and PSYA02H3, or (2) a final grade of 64% or higher in both PSYA01H3 and PSYA02H3, and a final grade of 72% or higher in [PSYB70H3 or (PSYB01H3)] and[PSYB07H3 or equivalent].

Application for admission will be made to the Office of the Registrar through ACORN, in April/May and July/August.

Completion Requirements:

Program Requirements
The Program requires completion of 12.5 credits, including at least 4.0 credits at the C- or D-level, of which at least 1.0 credit must be at the D-level:

1. Introduction to Psychology (1.0 credit)
PSYA01H3 Introduction to Biological and Cognitive Psychology
PSYA02H3 Introduction to Clinical, Developmental, Personality and Social Psychology

2. Statistical Methods (1.0 credit)
PSYB07H3 Data Analysis in Psychology
[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]
2. Laboratory Methods (1.5 credits)
[PSYB70H3 Methods in Psychological Science or (PSYB01H3) Psychological Research Laboratory]
PSYC70H3 Advanced Research Methods Laboratory
and 0.5 credit from among the following:

[PSYC71H3 or (PSYC11H3) Social Psychology Laboratory]
[PSYC72H3 or (PSYC26H3) Developmental Psychology Laboratory]
[PSYC74H3 or (PSYC05H3) Human Movement Laboratory]
[PSYC75H3 or (PSYC58H3) Cognitive Psychology Laboratory]
[PSYC76H3 or (PSYC04H3) Brain Imaging Laboratory]
PSYC06H3 Psychophysiology Laboratory

~~**3. Laboratory Methods (1.0 credit)**~~
~~PSYB01H3 Psychological Research Laboratory~~
~~*and*~~
~~*0.5 credit from among the following:*~~
~~PSYC04H3 Brain Imaging Laboratory~~
~~PSYC05H3 Human Movement Laboratory~~
~~PSYC06H3 Psychophysiology Laboratory~~
~~PSYC11H3 Social Psychology Laboratory~~
~~PSYC26H3 Developmental Psychology Laboratory~~
~~PSYC58H3 Cognitive Psychology Laboratory~~
~~NROC63H3 Neuroscience Laboratory~~
3. Statistical Methods (1.0 credit)
PSYB07H3 Data Analysis in Psychology
[PSYC08H3 Advanced Data Analysis in Psychology or PSYC09H3 Applied Multiple Regression in Psychology]

4. PSYC02H3 Scientific Communication in Psychology (0.5 credit)

5. PSYC85H3 History of Psychology (0.5 credit)

6. Breadth in Psychology at the B-level and C-level (5.0 credits) ~~5.0 credits~~
Students are required to take 3.0 credits at the B-level or C-level from one of the two content groups listed below and 2.0 credits from the other group:
(a) Social and Developmental (courses listed in the 10- and 20-series)
(b) Perception, Cognition and Physiology (courses listed in the 50- and 60-series)

7. Seminars in Psychology at the D-level (1.0 credit) ~~1.0 credit~~
Students must take ~~a~~ 0.5 credit from each grouping below ~~of the groupings listed~~:
(a) Social and Developmental (courses listed in the 10- and 20-series)
(b) Perception, Cognition and Physiology (courses listed in the 50- and 60-series)
~~Group One~~
~~PSYD11H3 Psychology of Interpersonal Relationships~~
~~PSYD12H3 Social Psychology of the Self~~
~~PSYD13H3 Psychology of Emotion Regulation~~
~~PSYD14H3 Psychology of Morality~~
~~PSYD15H3 Current Topics in Social Psychology~~
~~PSYD16H3 Critical Analysis in Psychology~~
~~PSYD18H3 Psychology of Gender~~
~~PSYD20H3 Current Topics in Psychology~~
~~PSYD22H3 Socialization Processes~~

~~Group Two~~
~~PSYD34H3 Human Intelligence~~
~~PSYD50H3 Current Topics Memory Cognition~~
~~PSYD51H3 Current Topics in Perception~~
~~PSYD54H3 Current Topics in Visual Recognition~~
~~PSYD66H3 Current Topics Human Brain Behaviour~~

8. Additional credits in Psychology (2.0 credits) ~~2.5 additional~~
Of ~~Students must choose 2.5 further credits from any of the remaining courses in Psychology. In selecting~~ the 2.0 ~~2.5~~
credits, at least 1.0 credit must be at the C-level. Supervised study [PSYC90 or PSYC93] or thesis [PSYD98] courses may
be used to fulfill a maximum of 0.5 credit.

Description of Proposed Changes:

1 - Increasing the grade requirement for admission from 72% to 75%.

2 - Requirement 2: increased total credit count by 0.5 credits; added PSYC70H3 as a required course; replaced PSYB01H3 with the required course PSYB70H3; changed all lab courses in PSY and bracketed old course codes and removed NROC63H3 course as option.

3 - Switched requirement 2 label with requirement 3 label.

4 - Requirement 6 label changed to "Breadth in Psychology at the B-level and C-level"

5 - Requirement 7 label changed to "Seminars in Psychology at the D-level" and language reworded.

6 - Requirement 8 label changed to "Additional credits in Psychology" also reducing credit by 0.5.

Rationale:

1 - Increasing the grade requirement for admission into the program is the second step of a multi-year process as outlined in the department's academic plan. The change is motivated by the volume of students in this program exceeding the ability to service the courses they want or require. With a gradual increase in admissions average over time, the program expects the volume to decrease, improving the ability to effectively serve the students in this program. Students will continue to have a second entry option to this program if they are not successful with getting the increased grade requirement in PSYA01H3 and PSYA02H3.

2 - Requirement 2: increased 0.5 credit by the addition of the new required course PSYC70H3 because this course provide students with enhanced research skills at the C-level. Replaced PSYB01H3 with the new PSYB70H3 course because this course provides students with enhanced research skills at the B-level. All older lab course codes require brackets with the new course code update to ensure consistency throughout the Calendar. NROC63H3 is being removed since this course typically reaches max capacity with neuroscience students and is therefore not accessible to students in this program.

3 - Switching requirement 2 label with requirement 3 label is necessary to ensure consistency with the other departmental programs

4 - Changing label for requirement 6 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

5 - Changing label for requirement 7 and rewording the language will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs.

6 - Changing label for requirement 8 will provide students a clearer indication of the courses that they are required to take from this program requirement and the revised label is consistent with the other relevant departmental programs. Reduction of 0.5 credit is necessary since 0.5 credit has been added to requirement 2.

Impact:

New students who want to enter into the program at the end of their first year will need to meet the revised admission average. Note: the second pathway into the program remains unchanged.

No impact on continuing students.

Consultation: DCC Approval: September 20th, 2018.

Resource Implications: None

5 New Courses:

NROD61H3: Emotional Learning Circuits

Description:

A seminar based course covering topics on emotional learning based on animal models of fear and anxiety disorders in humans. Through readings, presentations and writing students will explore the synaptic, cellular, circuit and behavioural basis of fear memory processing, learning how the brain encodes fearful and traumatic memories, how these change with time and developmental stage, as well as how brain circuits involved in fear processing might play a role in depression and anxiety.

Prerequisites: NROC61H3 and NROC64H3 and NROC69H3

Corequisites:

Exclusions: [NROD60H3 if taken in Fall 2018]

Recommended Preparation: NROC60H3
Enrolment Limits: 24
Note:

Learning Outcomes:
By the end of this course, students will:
-        Understand the basic macro and microcircuitry underlying the encoding, retrieval and extinction of fear memories
-        Become familiar with some of the most recent, cutting-edge research on emotional learning
-        Gain the necessary background to critically evaluate the design, analysis, and conclusions of systems neuroscience research
-        Understand how molecular, synaptic, cellular and systems neuroscience methods can be applied in research to address the latest challenges within the field
-        Write a research grant with original experiments designed by them
-        Write a review of their colleagues' research grants, learning how to evaluate a grant, how to provide constructive feedback, and experiencing the funding process from both sides
-        Practice reading, analysing and presenting scientific articles, as well as leading critical discussion on a topic related to emotional learning
-        Think critically and express themselves about unresolved (and resolved) questions in the field
-        Improve their oral and written communication skills through individual and group presentations, in-class discussions, grant-writing, grant-reviewing and feedback on written assignments

Topics Covered:
Fear Memory Circuitry
Methods for interrogating Fear Memory Circuits
Developmental Regulation of Emotional Learning
Fear Extinction
Erasing Fear
Memory Allocation
Encoding of Emotional Valence
Circuit Basis of Depression
Circuit Basis of Anxiety
Long-Term Fear

Methods of Assessment:
Evaluation in this course will include:
- An individual presentation of a research paper (25%)
- A group presentation on the background of the topic of the individual presentation (10%),
- As well as leading a discussion with the class following that topic presentation (5%).
These components will improve the students' presentation and critical thinking skills, as well as their ability to understand, summarize and extrapolate meaning from their readings.
- In addition, the students are expected to read all presented articles and take part in active discussion by asking questions and exposing their views and opinions, for which they will receive a participation mark assessed across the term (10 %).
- Write an original research grant in the format of a NSERC Discovery grant. This written assignment will be scaffolded in three parts: Rationale and hypothesis (2%), Objectives (8%) and Final Grant (25%). This will allow the students to incorporate feedback into their proposals and improve their writing and scientific creativity.
- Finally, students will also peer-review 2 anonymized grants (15 %). For that exercise students will submit an almost final version of their grant (for peer review purposes only) 2 weeks prior to the deadline for the final grant. This written (non-graded) feedback will be passed on to the students to further help guide the writing of their proposal. They will receive peer feedback on the following week so they will have the opportunity to incorporate it into their final version of the grant.

Mode of Delivery: In Class

Breadth Requirements: Natural Sciences

Rationale:
The proposed course gives students in the Neuroscience Specialist and Major programs an opportunity to expand their knowledge of emotional learning circuits and their regulations at cellular, synaptic and circuit levels. It will also help students develop their research skills and ability to apply neuroscience methods to address current challenges in the field.

This course has previously been taught under the umbrella of NROD60H3 - a shell seminar course taught by multiple instructors. Establishing a dedicated course code will signal to students the importance of this area of study.

Consultation:
DCC approval: September 7, 2018.
RO course code approval: September 10, 2018.

Resources: This course will be taught by existing faculty as part of her regular teaching load. It does not require extra TA support, or any additional space.

PSYB70H3: Methods in Psychological Science

Description:

This course focuses on scientific literacy skills central to effectively consuming and critiquing research in psychological science. Students will learn about commonly used research designs, how to assess whether a design has been applied correctly, and whether the conclusions drawn from the data are warranted. Students will also develop skills to effectively find and consume primary research in psychology.

Prerequisites: PSYA01H3 and PSYA02H3

Corequisites:

Exclusions: (PSYB01H3), (PSYB04H3)

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
This course is designed to load heavily on goals 2, 3, 5 and 7 (see: https://www.utsc.utoronto.ca/psych/program-completion-requirements-and-learning-outcomes).
By the end of the course, students will be able to:
1.   Identify the defining features of a scientific approach to the study of psychology and recognize key concepts in research ethics, research design, and basic data analysis.
2.   Differentiate between primary vs. secondary sources and identify different types of articles in psychology (e.g., primary empirical research, meta-analysis, systematic literature reviews).
3.   Demonstrate the skills necessary to search for, identify, and acquire primary research articles published in peer reviewed scientific journals.
4.   Identify the major sections of a primary research article and practice using these sections to identify the rationale, design, sample, variables, results, and conclusions of a research study.
5.   Practice evaluating research designs based on their internal versus external validity, measurement reliability and validity, and statistical results.
6.   Practice generating new research ideas, including being able to articulate new ideas in the form of an alternative and null hypothesis, key variables to be measured/manipulated, and key features of the appropriate research design (e.g., experimental versus non-experimental).
7.   Recognize the purpose of the APA style guide and identify how to correctly paraphrase, cite, and reference primary sources in the development of written work and research ideas.

Topics Covered:
Knowledge of research design:
•   Scientific method as applied to psychological science
•   Values, culture, and diverse conceptualizations of research and science within the field of psychology
•   Key research design distinctions, merits/limits (i.e., quasi-experimental, correlational, experimental, quantitative versus qualitative traditions)
•   Hypothesis generating and testing
•   Types of measurements (e.g., surveys/questionnaires, naturalistic/structured observations, phys/neuro/behav measurements)
•   Evaluating the quality of the research design (internal versus external validity reliability and validity o measurement, Type I/II errors, etc.

- Basic research ethics (e.g., past transgressions, REBs/IRBs, animal research)
- Descriptive vs. inferential statistics (conceptually)
- Conceptual understanding of main effects and interactions, ability to recognize them visually

Scientific literacy skills:
- Differentiating between primary and secondary sources
- Understanding the purpose of an empirical article, review article, meta-analysis, etc.
- Clarifying the major sections of an empirical article and their respective purposes
- Introducing a schema for how to consume an empirical article effectively
- Introduced to the idea of style guides and the purpose they serve (e.g., APA)
- Recognition of when a citation is appropriate/required to support an idea/argument
- Introduced to how to cite an idea/paper appropriately (in-text citations, reference list)
- Introduction to searching the psychological literature

Methods of Assessment:
The learning objectives of this large enrollment / web-option course will be supported through a variety of learning activities and assessments, including:
- 5%: Online study quizzes that promote understanding of the terms and concepts of the course and allow for the development of a partially flipped classroom model that includes in-class laboratory activities.
- 10%: Research laboratory activities that allow students hands-on opportunities to develop and practice their scientific literacy skills. These activities can be completed in-class and/or online to facilitate traditional in-class and/or web option delivery. The research laboratory activities will be assessed via a combination of activity "check ins" and laboratory reports and quizzes using:
o An in-class response system (e.g., iClickers/Top Hat; in-class only) and
o Quercus surveys, quizzes, and discussion boards (for in-class and web option).
- 10%: Article critique assignments that allow students practice applying their scientific literacy skills. These assignments will be prepared outside of class time and submitted via the Quercus quiz and/or assignment upload functions.
- 75%: An in-person invigilated midterm test (35%) and an in-person invigilated final exam (40%), both of which will focus on conceptual understanding of key terms and concepts from the textbook readings, content lessons, research laboratory activities, and article critique assignments.

Mode of Delivery: In Class

Breadth Requirements: Social & Behavioural Sciences

Rationale:
Strong scientific literacy skills and firm knowledge of research methods is essential for students to be able to effectively consume psychological science. This course will replace PSYB04H3 as the first research methods entry point for all PSY and MHS Specialists and Majors, and PSY Minors. The content of PSYB01H3 (retired) which overlaps with PSYB04H3 (retired) will also be retained in this proposed course.
This course will also serve as prerequisites for most of PSY C-level and D-level courses, allowing the department to better build and scaffold skill development in research methods.

Consultation:
DCC Approval: Sept 6, 2018
RO Course Code Approval: September 10th, 2018.

Resources:
This course will be taught by existing faculty as part of her regular teaching load. This course absorbs the resources from PSYB04H3, which has been retired. Therefore, no additional instructor or TA resources will be required.

PSYC22H3: Infancy

Description:
Infants must learn to navigate their complex social worlds as their bodies and brains undergo incredible changes. This course explores physical and neural maturation, and the development of perception, cognition, language, and social-emotional understanding in infants prenatally until preschool.

Prerequisites: PSYB20H3 and [(PSYB01H3) or (PSYB04H3) or PSYB70H3] and [PSYB07H3 or STAB22H3 or STAB23H3]

Corequisites:
Exclusions: PSY316H1, PSY316H5
Recommended Preparation:
Enrolment Limits: 100
Note:

Learning Outcomes:
After completing this course, student will be able to:
1)   Describe how physical maturation, perception, cognition, language and social-emotional behavior changes from before birth to age four.
2)   Understand the methodologies used in research with infants and very young children.
3)   Critically evaluate empirical research in developmental psychology.
4)   Communicate effectively about theoretical and empirical concepts during class discussion, oral presentation and written assignments.
5)   Connect concepts learned in class with experiences in everyday life.

Topics Covered:
1.   Research methods and enduring themes in infant development
2.   Prenatal development and the newborn period: physical and neural development
3.   Sensation, perception, and motor development
4.   Cognition, learning, and conceptual development in infancy
5.   Language and communication
6.   Social development: infant-caregiver relationships, attachment, understanding self and others, developing prosociality
7.   Emotional Development: temperament, understanding, expressing and regulating emotions
8.   Babies in society: Child care, media, and technology

Methods of Assessment:
- Midterm (20%) and Final exam (30%): These tests will include multiple choice and short answer questions, covering both lecture, assigned readings, and text-book materials.
- Experiment Demo (10%): At the beginning of each class, students in small groups (2 or 3) will give a short presentation to the class. These presentations will explain and demonstrate the purpose, methods and results of an experiment from an assigned reading.
- Participation (10%): There will be multiple in-class discussions and activities. Participation will be assessed based on contribution to discussion, and respectfully offering constructive feedback and comments after group presentations.
- Research Proposal (30%): Students will choose a study discussed in class. They will then design a follow-up study and do a literature review on this topic to write 1) an introduction that explains what previous studies on this topic have found, what is still unknown, and how the proposed study will build on that knowledge. Specific hypotheses should be clearly outlined, and b) a methods section outlining exactly how the experiment would be run.

Mode of Delivery: In Class

Breadth Requirements: Social & Behavioural Sciences

Rationale:
The proposed C-level course will fill a gap in Developmental Psychology offerings. Currently, PSYB20H3 introduces development from a lifespan perspective, touching on physical, psychological, and social development from before birth to death. At the C level, this course on infancy will allow students to build on the topics introduced in PSYB20H3 in a coherent way.

Consultation:
DCC Approval: September 20th, 2018.
RO Course Code Approval: on September 18th, 2018.

Resources:
An existing faculty member will teach this course as part of her regular teaching load.
The course will require TA support (200 hours), which will be covered by the departments existing budget.

PSYC24H3: Childhood and Adolescence

Description:

This advanced course in developmental psychology explores selected topics in childhood and adolescent development during school age (age 4 through age 18). Topics covered include: cognitive, social, emotional, linguistic, moral, perceptual, identity, and motor development, as well as current issues in the field as identified by the instructor.

Prerequisites: PSYB20H3 and [(PSYB01H3) or (PSYB04H3) or PSYB70H3] and [PSYB07H3 or STAB22H3 or STAB23H3]

Corequisites:

Exclusions: PSY310H5

Recommended Preparation:

Enrolment Limits: 100

Note:

Learning Outcomes:
After completion of this course, students will:
1.   Be able to demonstrate deep familiarity with the most significant trends, findings, and concepts utilized in the study of child psychological development throughout the school-age years (fulfills Psychology program Goal 1)
2.   Be able to plan and execute a short observational study with young children, including both naturalistic and structured observations in keeping with the current best practices in the field (fulfills Psychology program Goal 2)
3.   Be comfortable and proficient critiquing new and historical methods and findings in the field of child development, particularly as it applies to children at school age (fulfills Psychology program Goal 3)
4.   Be able to apply the knowledge and skills learned in the course to their own childhood experiences and those of children in their lives currently and in their future families and careers (fulfills Psychology program Goals 4, 9, and 10)
5.   Understand the ethical principles central to conducting research with humans, and in particular with vulnerable populations such as young children (fulfills Psychology program Goal 5)
6.   Be proficient in using online databases and search engines to find, analyze, and incorporate scholarly source material into their own writing (fulfills Psychology program Goal 6)
7.   Have practiced writing a brief observational study according to standards in the field (fulfills Psychology program Goal 7)
8.   Be able to identify individual differences in patterns in development and critically analyze new empirical findings in light of knowledge of such differences (fulfills Psychology program Goal 8)

Topics Covered:
All topics below will be covered with an emphasis on changes occurring during the school-age years.
*   Methods for studying child development
*   Perceptual and motor development
*   Cognitive development
*   Development of self, identity
*   Theory of mind
*   Emotional development
*   Language development at school age
*   Intelligence and academic achievement
*   Gender and sexuality development
*   Social development (parent and peer relationship development)
*   Moral development
*   Clinical disorders of childhood and adolescence

Methods of Assessment:
*   In-class quizzes comprised of multiple choice and short answer questions (4)—support course learning outcomes 1 (deep familiarity), 3 (critique), and 8 (individual differences) 44%
*   Final exam—supports course learning outcomes 1 (deep familiarity), 3 (critique), and 8 (individual differences) 30%
*   Top Hat in-class and homework exercises—supports course learning outcomes 1 (deep familiarity), 3 (critique), 4 (personal experience) and 8 (individual differences) 8%

• Naturalistic and structured observation assignment and paper. Students will, using a course-based ethics protocol, observe a child in their own family or community in both a structured and a naturalistic observation, using a selection of the principles covered in the course. Students will plan, execute, and write up their findings in a short paper. Supports course learning outcomes 2 (plan and execute a study), 5 (ethical principles), 6 (database searches), and 7 (write up). 18%

Mode of Delivery: In Class

Breadth Requirements: Social & Behavioural Sciences

Rationale:
This course will fill a curriculum gap by providing a C-level offering focused on earlier developmental stages of childhood/adolescence. It will also provide students with the opportunity to gain in-depth, advanced knowledge and experience of developmental psychology theories, concepts, findings, and methods across all life stages. This course will also be used towards Specialist and Major Psychology program requirements. Moreover, the course will allow students to engage and document real-world behaviours by letting students observe a naturalistic and structured environment of children. This will provide opportunity for a wider range of student interest.

Consultation:
DCC Approval: September 20th, 2018.
RO Course Code Approval: September 18th, 2018.

Resources:
The course will be taught by existing faculty as a part of his regular course load. The course requires TA support, which will be covered by the department's existing budget.

PSYC70H3: Advanced Research Methods Laboratory

Description:

The course focuses on methodological skills integral to becoming a producer of psychological research. Students will learn how to identify knowledge gaps in the literature, to use conceptual models to visualize hypothetical relationships, to select a research design most appropriate for their questions, and to interpret more complex patterns of data.

Prerequisites: [(PSYB01H3) or (PSYB04H3) or PSYB70H3] and [PSYB07H3 or STAB22H3 or STAB23H3]

Corequisites:

Exclusions:

Recommended Preparation:

Enrolment Limits:

Note:

Learning Outcomes:
This course is designed to load heavily on goals 2, 3, 5, 7 and 10 (see: https://www.utsc.utoronto.ca/psych/program-completion-requirements-and-learning-outcomes).
After successful completion of this course, students will be able to:
1.   More effectively consume and critique psychological research;
2.   Distinguish between exploratory and hypothesis-driven approaches and for the latter, to generate clear and effective hypotheses regarding variables of interest;
3.   Construct clear and thoughtful conceptual models to articulate different relationships between variables of interest;
4.   Produce the most sensible research design given the research question, and to identify various tools appropriate to gathering the data needed to speak to the question(s) at hand;
5.   Visually and verbally express the different hypothetical findings that could be found prior to actually analyzing the data, with careful attention to generating reasonable (and alternative) interpretations;
6.   Consider higher-level issues in research pertinent to data analysis and interpretation, including effect sizes, mediators and moderators, a conceptual understanding of techniques such as factor analysis (FA) and structural equation modeling (SEM), and the like.
7.   Conceptualize and concertize what the next research steps could look like informed by the results of a given study.

Topics Covered:

Each of the four points below are major themes in the course, and the items below are elements that will be discussed in each respective section.

(1) Strengthen process of background research, identifying a 'hole' in the literature, and proposing a question
- Importance of carefully combing the literature and finding research that speaks to your inquiry
- Reinforcement of understanding articles (esp. the methods/results sections); strengthening the ability to summarize research cogently
- Critiquing: from relatively lower-level (e.g., increase your n) to higher-level (i.e., was this the best way to quantify issue 'x'?)
- Surveying the value and limitations of exploratory research
- Distinguishing between forward vs. backward inference approaches
- Proposing a clear, articulate research question that aims to build on existing knowledge and to fill a gap of knowledge
 (2) Develop a conceptual model with variables of interest and articulate a reasoned hypothetical relationship
- Understanding what a conceptual model is and why it is useful
- Practice constructing conceptual models to represent ideas and hypothetical relationships
- Emphasize differences between hypothesis-driven and exploratory approaches
- Articulate well-reasoned, informed hypotheses
 (3) Identify an appropriate method(s) to evaluate the hypotheses
- Considering and choosing the best design to address your inquiry
- Contemplate reasonable ways to evaluate a hypothesis agnostic to the literature (i.e., what kind of measures would I need to evaluate my hypotheses - "thought experiment")
- Consider some of the common practices/designs that occur within/across CAGs
- Draw on the literature to select appropriate measurements given your inquiry (e.g., observational, self-report, behavioural, physio, neuro)
- Engage a more advanced treatment issues in reliability, validity; a more nuanced discussion of different methods (e.g., scale construction, using reaction time data)
 (4) Understanding and evaluating the data, moving forward
- Express what your hypothesized results should look like visually prior to evaluating your data
- Practice consuming and interpreting more complex data patterns (multifactorial, complex interactions, etc.)
- Understanding moderators and mediators (conceptually, not statistically)
- Value of effect sizes, their implications (conceptually, not statistically)
- Strengthen "what test is used for X kind of data" skill, and "what test(s) is/are used for X kind of research question" ?
- Conceptual overview of select contemporary advanced research/stats methods (e.g., SEM, CFA)
- Evaluation of the null and alternative hypotheses
- Thoughtful consideration of the limitations of the present research (e.g., confounds)
- Informed by the present findings, considering the types of experiments we should conduct in the future?

Methods of Assessment:

Tutorials (10%)
Tutorials will be structured to strengthen the students' ability to effectively research journal articles, and to practice skills described in lecture. Tutorial marks will be based on reading quizzes and in-tutorial assignments (i.e., no marks for just being there).
 Midterm Examination (30%)
The Midterm Examination will consist of multiple-choice (MC) and short essay (SE) questions. The MC questions will tap foundational course knowledge to ensure that students understand core concepts from the course. The SE questions will tax a student's ability to reason and problem-solve, More specifically, students will be provided with a research question and will be asked to think through various elements for the "next steps," such as identifying an appropriate research design and defending your choice, considering appropriate measurement tools and how they might be employed, etc. The majority of the points will be allocated to the SE section.
 Research Proposal (25%)
Informed by the skills learned and strengthened through lecture and tutorials, students will work in small groups to create a thoughtful research proposal. The proposal must include a pertinent review of the literature, the identification of a gap where more knowledge is needed, and an articulation of how they might propose to perform the follow-up study. This project will be broken into multiple pieces to ensure students are making appropriate progress informed by course-level feedback. A detailed grading rubric will be employed to evaluate their work.
 Final Examination (35%)
The Final Examination will be like the Midterm Examination in structure, although it will be longer and cumulative in nature. This will require thoughtful synthesis of what the students have learned in the course to take a "cool research idea"

all the way from start to finish. Like the Midterm, the point allocation will be heavily skewed in favor of short responses over multiple choice.

Mode of Delivery: In Class

Breadth Requirements: Social & Behavioural Sciences

Rationale:
PSYC70H3 will build upon topics introduced in PSYB70H3 in a more producer-focused manner and will be required for all Specialist students. PSY/MHS Majors student may also take this course if they wish to develop further research method skills if space is permitted. This course will give students further opportunity to strengthen their research methods skills in their programs. This course will prepare and grant students eligibility to enter into their third and fourth year research placements.

Consultation:
DCC Approval: September 6th, 2018.
RO Course Code Approval: September 10th, 2018.

Resources:
This course will be taught by an existing faculty member as part of his regular teaching load.
T.A. resources currently allocated to PSYB01H3 will be transferred to PSYC70H3. The department may offer an additional section of the course during the Summer session for which stipendiary funds will be required and will be requested from the Dean's Office.