University of Toronto Mississauga

SCI Curriculum Proposals Reports

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Psychology (UTM), Department of

3 Course Modifications

PSY290H5: Introduction to Neuroscience

Exclusions:

Track Changes:

PSY290H1 or PSYB64H3 **or HMB200H1**

Rationale:

Updating the abbreviated title to reflect previous changes to the title of the course.
Adding HMB200H1 (UTSG) to the list of exclusionary courses

Consultation:

Psychology undergraduate curriculum committee

Resources:

None

PSY389H5: Perception Laboratory

Prerequisites:

Track Changes:

PSY202H5 (or equivalent) and **(**PSY280H5 **or PSY290H5)**

Rationale:

Expanding prerequisites in PSY389H5 (currently PSY280H5) to include PSY280H5 or PSY290H5.
Expanding the list of prerequisites will make more students eligible to take PSY389H5.

Consultation:

Psychology undergraduate curriculum committee

Resources:

None

PSY395H5: Hormones and Behaviour

Description:

Track Changes:

~~A~~**This course is a**n **introduction to th**e **field of Beha**v**iou**r**al Neu**~~**at**~~**roendocri**n**o**~~**n**~~**logy; the study** of relation**ships** between ~~**the**~~ hormon~~**al**~~**es, the nervous** system, and ~~**brain /**~~ behaviour in a variety of

species **from** ~~(~~**a** ~~**in**~~c~~**lud**~~**omparati**~~**ng**~~**ve** **human**~~**pers**~~**)**~~ **pective**. Behavioural / functional systems ~~**to be considered**~~**may** includ~~**e th**~~e reproductive behaviour~~**s**~~, ~~**(**~~s~~**exu**~~**oci**al ~~**and mat**~~b~~**er**~~**rn**~~ha~~**l), aggress**~~v~~io~~**n,**~~ ~~**ci**~~r~~**cadian rhythms**~~, ~~**seas**~~**bio**~~**n**~~**logic**al rhythms, eating, a~~**ffective**~~**nd** st~~**at**~~res~~**, learning and memorys**~~.

Rationale:

We are updating the description to more accurately reflect the focus and content of the course.

Consultation:

Psychology undergraduate curriculum committee

Resources:

None

Study of University Pedagogy (UTM), Institute for the

6 New Courses

UTM251H5: Special Topics at the Intersection of Science and Humanities

Contact Hours:
Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

This course covers a special topic at the intersection of the sciences and humanities. Content relates to the instructor's area of interest and varies in focus from year to year. This course may satisfy either the Sciences or Humanities distribution requirement, depending on the topic offered. The course may vary in terms of contact type (L, S, T, P) from year to year, but there will be between 24-36 contact hours in total. See the UTM Timetable.

Prerequisites:

4.0 credits

Distribution Requirements:
Humanities, Science

Rationale:
As ISUP plans for launching minor and/or major programs in the future, it will be important to have special topics codes in place that allow faculty to develop and run new courses. ISUP is similarly in the process of refining and growing the utmONE line of courses. As such, the proposed special topics codes will scaffold up from the basic academic skills instruction offered in 100-level utmONE courses to offer intermediate and advanced instruction in interdisciplinary ways of reading, writing, and knowing.

Consultation:
Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:
Resource form submitted

UTM252H5: Special Topics at the Intersection of Science and Social Science

Contact Hours:
Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

This course covers a special topic at the intersection of the sciences and social sciences. Content relates to the instructor's area of interest and varies in focus from year to year. This course may satisfy either the Sciences or Social Sciences distribution requirement, depending on the topic offered. The course may vary in terms of contact type (L, S, T, P) from year to year, but there will be between 24-36 contact hours in total. See the UTM Timetable.

Prerequisites:

4.0 credits

Distribution Requirements:
Science, Social Science

Rationale:
As ISUP plans for launching minor and/or major programs in the future, it will be important to have special topics codes in place that allow faculty to develop and run new courses. ISUP is similarly in the process of refining and growing the utmONE line of courses. As such, the proposed special topics codes will scaffold up from the basic academic skills instruction offered in 100-level utmONE courses to offer intermediate and advanced instruction in interdisciplinary ways of reading, writing, and knowing.

Consultation:
Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:
Resource form submitted

UTM351H5: Special Topics at the Intersection of Science and Humanities

Contact Hours:

Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

This course offers in-depth instruction on a special topic at the intersection of the sciences and humanities. Content relates to the instructor's area of interest and varies in focus from year to year, but it is designed to offer in-depth instruction in interdisciplinary research methods and writing practices. This course may satisfy either the Sciences or Humanities distribution requirement, depending on the topic offered. The course may vary in terms of contact type (L, S, T, P) from year to year, but there will be between 24-36 contact hours in total. See the UTM Timetable.

Prerequisites:

4.0 credits, including 0.5 credit in UTM courses

Distribution Requirements:

Humanities, Science

Rationale:

As ISUP plans for launching minor and/or major programs in the future, it will be important to have special topics codes in place that allow faculty to develop and run new courses. ISUP is similarly in the process of refining and growing the utmONE line of courses. As such, the proposed special topics codes will scaffold up from the basic academic skills instruction offered in 100-level utmONE courses to offer intermediate and advanced instruction in interdisciplinary ways of reading, writing, and knowing.

Consultation:

Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:

Resource form submitted

UTM352H5: Special Topics at the Intersection of Science and Social Science

Contact Hours:
Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

This course offers in-depth instruction on a special topic at the intersection of the sciences and social sciences. Content relates to the instructor's area of interest and varies in focus from year to year, but it is designed to offer in-depth instruction in interdisciplinary research methods and writing practices. This course may satisfy either the Sciences or Social Sciences distribution requirement, depending on the topic offered. The course may vary in terms of contact type (L, S, T, P) from year to year, but there will be between 24-36 contact hours in total. See the UTM Timetable.

Prerequisites:

4.0 credits, including 0.5 credit in UTM courses

Distribution Requirements:
Science, Social Science

Rationale:
As ISUP plans for launching minor and/or major programs in the future, it will be important to have special topics codes in place that allow faculty to develop and run new courses. ISUP is similarly in the process of refining and growing the utmONE line of courses. As such, the proposed special topics codes will scaffold up from the basic academic skills instruction offered in 100-level utmONE courses to offer intermediate and advanced instruction in interdisciplinary ways of reading, writing, and knowing.

Consultation:
Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:
Resource form submitted

UTM451H5: Advanced Special Topics at the Intersection of Science and Humanities

Contact Hours:

Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

This course offers advanced instruction on a special topic at the intersection of the sciences and humanities. Content relates to the instructor's area of interest and varies in focus from year to year, but it is designed to offer in-depth instruction in interdisciplinary research methods and writing practices. This course may satisfy either the Sciences or Humanities distribution requirement, depending on the topic offered. The course may vary in terms of contact type (L, S, T, P) from year to year, but there will be between 24-36 contact hours in total. See the UTM Timetable.

Prerequisites:

4.0 credits, including 0.5 credit in UTM courses

Distribution Requirements:

Humanities, Science

Rationale:

As ISUP plans for launching minor and/or major programs in the future, it will be important to have special topics codes in place that allow faculty to develop and run new courses. ISUP is similarly in the process of refining and growing the utmONE line of courses. As such, the proposed special topics codes will scaffold up from the basic academic skills instruction offered in 100-level utmONE courses to offer intermediate and advanced instruction in interdisciplinary ways of reading, writing, and knowing.

Consultation:

Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:

Resource form submitted

UTM452H5: Advanced Special Topics at the Intersection of Science and Social Science

Contact Hours:

Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

This course offers advanced instruction on a special topic at the intersection of the sciences and social sciences. Content relates to the instructor's area of interest and varies in focus from year to year, but it is designed to offer in-depth instruction in interdisciplinary research methods and writing practices. This course may satisfy either the Sciences or Social Sciences distribution requirement, depending on the topic offered. The course may vary in terms of contact type (L, S, T, P) from year to year, but there will be between 24-36 contact hours in total. See the UTM Timetable.

Prerequisites:

4.0 credits, including 0.5 credit in UTM courses

Distribution Requirements:

Science, Social Science

Rationale:

As ISUP plans for launching minor and/or major programs in the future, it will be important to have special topics codes in place that allow faculty to develop and run new courses. ISUP is similarly in the process of refining and growing the utmONE line of courses. As such, the proposed special topics codes will scaffold up from the basic academic skills instruction offered in 100-level utmONE courses to offer intermediate and advanced instruction in interdisciplinary ways of reading, writing, and knowing.

Consultation:

Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:

Resource form submitted

3 Course Modifications

UTM108H5: utmONE: Special Topics at the Intersection of Science and Social Science

Description:

Track Changes:

This course brings together first-year students to explore a current topic or problem at the intersection of science and social science in a small-group environment. The focus of each section will depend on the instructor's areas of expertise and will provide students with the opportunity to develop foundational learning strategies and sharpen their academic skills to support the transition into university. **Students participate in a series of tutorials that will help them build foundational skills for academic success such as creating study plans, taking notes, reading critically, and developing a growth mindset.**

Rationale:

We are adding a standard line in the description for all utmONE Foundations courses as a reflection of the updated skills-building tutorials that these courses offer.

Consultation:

Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:

None

UTM111H5: utmONE: Tools of the Trade

Description:

Track Changes:

This course is an introduction to the common problem-solving tools used in the sciences and social sciences. It is designed to address the fundamental skills needed for comprehension and effective communication in these areas. The skills being addressed may include critical analysis of texts (primary literature, review papers, textbooks), use of databases to gather, manipulate and visualize data; interpretation and presentation of data; information gathering and writing skills (lab reports, critical essays); and oral presentations. Specific examples will be drawn from a variety of current research topics in both the sciences and social sciences. ~~**As part of this course s**~~**S**tudents ~~**will**~~ participate in a series of tutorials that will help them build foundation**al skill**s for academic success ~~**(**~~such as **creating study plan**~~**der**~~**s,** ta~~**nd**~~king **not**~~**h**~~**es** ~~**value**~~**, of** ~~**h**~~**read**ing~~**her edu**~~c~~**ar**~~iti~~**on**~~**cally**, **and** developing a growth mindset,~~ **and finding passion).** **[24L,** ~~**< 12T/]**~~ **p>**

Exclusions:

Track Changes:

UTM108H5 or UTM109H5 or UTM110H5 or UTM112**H5 or UTM113**H5 or UTM114H5 or UTM115H5 or UTM116H5 or UTM117H5 or UTM118H5 or UTM119H5 or UTM190H5 or UTM191H5 or UTM192H5 or UTM193H5 or UTM194H5 or UTM195H5 or UTM196H5 or UTM197H5

Rationale:

We are adding a standard line in the description for all utmONE Foundations courses as a reflection of the updated skills-building tutorials that these courses offer.

Consultation:

Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:

None

UTM118H5: utmONE: Science of Learning

Description:

Track Changes:

This interdisciplinary course encourages students to take ownership of their education through a focus on the process of learning how to learn and by cultivating the habits of mind for lifelong achievement and success. Students will explore theories of learning and research on the strategies students should employ to reach deep understanding. "Science of Learning" is designed to help students develop their critical thinking, university-level oral and written communication, critical reading, and other foundational academic skills. ~~As part of this course s~~Students ~~will~~ participate in a series of tutorials that will help them build foundation**al skill**s for academic success ~~(~~such as **creating study plan~~der~~**s, ta~~nd~~king **not~~h~~es ~~value~~, ~~of h~~read**ing**~~her edu~~**c~~a~~**riti~~on~~cally**, **and** developing a growth mindset, ~~and finding passion).~~ ~~[24L, < 12T~~**/ ~~]~~ p>**

Exclusions:

Track Changes:

UTM108H5 or UTM109H5 or UTM110H5 or UTM111H5 or UTM112H5 or UTM114H5 or UTM115H5 or UTM116H5 or UTM117H5 or UTM119H5 or UTM190H5 or UTM191H5 or UTM192H5 or UTM193H5 or UTM194H5 or UTM195H5 or UTM196H5 or UTM197H5

Rationale:

We are adding a standard line in the description for all utmONE Foundations courses as a reflection of the updated skills-building tutorials that these courses offer.

Consultation:

Consultation with ISUP curriculum committee occurred on January 27, 2023.

Resources:

None

Chemical and Physical Sciences (UTM), Department of

2 Course Modifications

CHM412H5: Sensors, Sequencers, and Diagnostic Technologies

Title:

Track Changes: ~~A~~Sen~~alyti~~sors, Sequenc~~al M~~e~~thod~~rs, ~~of~~and ~~B~~Diagno~~mol~~stic Tec~~ule A~~hn~~a~~ol~~ys~~ogies

Rationale:

CHM412H5, once a popular senior level analytical chemistry course offering (reaching and enrolment of 20 in 2015), has suffered from declining course enrolments, particularly over the last few course offerings. This may in part owe to the rather ambiguous course name “Analytical Methods of Biomolecule Analysis” which does not paint a clear picture of the course contents. The new name should be more telling of the true focus of the course, which is related to teaching the design and function of diagnostic assays (including DNA sequencing technologies) for the determination of disease conditions and detection of disease-causing agents

Resources:

None

CHM462H5: Revealing the Chemistry behind Biomolecules

Title:

Track Changes: ~~Ad~~Revealin~~c~~g the~~s in~~ Chemi~~cal~~stry behind Bio~~l~~mo~~gy~~lecules

Rationale:

The instructor proposed to change the name of CHM462. The current title is "Advances in Chemical Biology." The term "Advances" is not helpful or descriptive, and it old-fashioned. Moreover, CHM462 does not actually approach the topic of "chemical biology," which normally uses small, synthesized organic molecules to tweak biomolecules, like proteins, nucleic acids, cell membranes, etc. I cover larger biosystems, like protein structure and interactions with other biomolecules and nucleic acid mutations and libraries.

Resources:

None

Mathematical and Computational Sciences (UTM), Department of

10 New Courses

CSC299H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their second year to work in the research project of a professor in return for 299H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Distribution Requirements:

Science

Rationale:

Sometimes we have particularly strong students, or short but intensive projects, for which an H course would serve better than a Y course.

CSC379H5: Introduction to Medical Robotics

Contact Hours:
Lecture: 24 **/ Tutorial: / Practical:** 12 **/ Seminar:**

Description:

An introduction to medical robotics from an application driven perspective. The course covers different categories of medical robots and their application principles for therapeutics, with most examples from surgical robotics. A focus lies on computer methods that assist physicians during their work with the robots and enable robotic treatments for patients. Topics of covered computer-assisted methods encompass treatment planning, patient registration, human-robot interaction, robot control and task execution. Methods will be implemented and explored in a practical environment including the use of real robots.

Enrolment Limits:
Prerequisites:

CSC209H5 and CSC376H5

Recommended Preparation:

CSC301H5 and CSC311H5

Distribution Requirements:
Science

Rationale:
These is no course offering so far to teach students robotics content with focus on medical applications. Robot-assisted surgery CAGR from 2018-22 is 19%, now reaching a total market size of 9 billion $. Additionally, medical robotics is a field that requires collaborative and safe robot methods which translates to another huge market in production and household applications. This will prepare the students to take on jobs in a new sector. Further on, the diversification of offered courses in 3rd/4th year is raise and prepares the department for a future major in robotics. The course will make use of the resource of the robotics teaching lab, and the teach lab engineer.

Resources:
Resource form submitted. CS Assistant Professor Lueder Kahrs will teach the course. TA resources similar to CSC376H5 are required. Robot Teaching lab for practical.

CSC399H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 399H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

Sometimes we have particularly strong students, or short but intensive projects, for which an H course would serve better than a Y course.

CSC495H5: Topics in Information Security

Contact Hours:
Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

Introduction to a topic of current interest in robotics intended Information Security specialists, CSC majors and specialists. Content will vary from year to year but will always maintain a robotics focus. The contact hours for this course may vary in terms of contact type (L, T, P) from year to year, but will be between 24-48 contact hours in total. See the UTM Timetable.

Enrolment Limits:
Prerequisites:

CSC347H5. Additional required prerequisite(s) will be available on the UTM timetable along with the topic title prior to course registration.

Distribution Requirements:
Science

Rationale:
Some of our special topics courses these days are in the area of information security; this is a result of our increased hiring in this area. Students sometimes do not have the prerequisites for special topics information security courses, and it is hard for them to anticipate such gaps prior to our special topics courses being announced. Having a separate special topics course for information security will remedy this and clarify messaging to students. CSC347H5 is needed for any advanced study in information security.

Resources:
None.

CSC499H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 499H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

Sometimes we have particularly strong students, or short but intensive projects, for which an H course would serve better than a Y course.

MAT299H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their second year to work in the research project of a professor in return for 299H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

MAT would like the ability to offer 0.5 credit/H length/scope ROP projects as this would be more likely to garner uptake in Fall/Winter and may align better with the nature of the research.

Consultation:

On 27-Jan-23 with MAT curriculum ctte & on 3-Feb-23 with MCS Chair(s).

Resources:

None.

MAT399H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 399H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

MAT would like the ability to offer 0.5 credit/H length/scope ROP projects as this would be more likely to garner uptake in Fall/Winter and may align better with the nature of the research.

Consultation:

On 27-Jan-23 with MAT curriculum cttee & on 3-Feb-23 with MCS Chair(s).

Resources:

None.

MAT499H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 499H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

MAT would like the ability to offer 0.5 credit/H length/scope ROP projects as this would be more likely to garner uptake in Fall/Winter and may align better with the nature of the research.

Consultation:

On 27-Jan-23 with MAT curriculum ctte & on 3-Feb-23 with MCS Chair(s).

STA399H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 399H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

None of the STA lecture-type courses are Y courses. There is already low uptake/participation in STA ROP courses. There may be increased interest from supervising Faculty if the project scope/length was more reasonable (ie: 4 months during F/W as opposed to 8 months in F/W). STA would like the ability to offer 0.5 credit/H length/scope ROP projects as this would be more likely to garner uptake in Fall/Winter and may align better with the nature of the research. Enrolment limits (restriction) added to better align with Reading Courses.

Consultation:

On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

STA499H5: Research Opportunity Program

Description:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 499H course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall/winter sessions in early February and students are invited to apply in early March. See Research Opportunity Program (ROP) for more details.

Enrolment Limits:

Distribution Requirements:

Science

Rationale:

None of the STA lecture-type courses are Y courses. There is already low uptake/participation in STA ROP courses. There may be increased interest from supervising Faculty if the project scope/length was more reasonable (ie: 4 months during F/W as opposed to 8 months in F/W). STA would like the ability to offer 0.5 credit/H length/scope ROP projects as this would be more likely to garner uptake in Fall/Winter and may align better with the nature of the research. Enrolment limits (restriction) added to better align with Reading Courses.

Consultation:

On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

17 Course Modifications

CSC148H5: Introduction to Computer Science

Contact Hours:

Track Changes: Lecture: 3~~6~~8 **/ Tutorial: / Practical: / Seminar:**

Description:

Track Changes:

Abstract data types and data structures for implementing them. Linked data structures. Encapsulation and information-hiding. Object-oriented programming. Specifications. Analyzing the efficiency of programs. Recursion. This course assumes programming experience in a language such as Python, C++, or Java, as provided by CSC108H5. ~~**Students who already have this background may consult the Computer Science faculty advisor for advice about skipping CSC108H5.**~~

Rationale:

1. We make like 0-1 exceptions a year. This year, many students asked, we made zero exceptions.
2. Adding two hours lecture time for this multi-lecture course. This change will allow us to have a fixed test time across all LEC sections.

Resources:

Resource form submitted

CSC299Y5: Research Opportunity Program

Description:

Track Changes:

This course~~s~~ provides a richly rewarding opportunity for students in their second year to work in the research project of a professor in return for 299Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall / winter sessions in early February and students are invited to apply in early March. See ~~**Exp**~~**Re**~~**ri**~~se~~**nti**~~a**~~**l and Inte**~~r~~**national**~~**ch** Opportunit~~**ies**~~**y Program (ROP)** for more details.

Enrolment Limits:

Track Changes:

Priority is given to students enrolled in Computer Science Specialist, Information Security Specialist, Bioinformatics Specialist or Computer Science Major programs.

Rationale:

Adding enrollment control and directing students appropriately

Consultation:

Resources:
None

CSC375H5: Algorithmic Intelligence in Robotics

Prerequisites:
Track Changes:
~~**CSC209H5 and (MAT223H5 or MAT240H5) and**~~ (STA246H5 or STA256H5) and CSC376H5

Recommended Preparation:
Track Changes:
~~**CSC258H5 and**~~ CSC301H5

Rationale:
CSC209H5 and (MAT223H5 or MAT240H5) and CSC258H5 are pre-requisites for CSC376H5.

Resources:
None

CSC392H5: Computer Science Implementation Project

Description:
Track Changes:

This course involves a significant implementation project in any area of Computer Science. The project may be undertaken individually or in small groups. The project is offered by arrangement with a Computer Science faculty member.

Note:
Only UTM students may enroll in this course. If you are a student at a different campus, you can work with UTM professors but please enroll in your campus's independent study or project course.

Rationale:
Add this note to clarify who can enrol in these courses.

Resources:
None

CSC393H5: Computer Science Expository Work

Note:
Only UTM students may enroll in this course. If you are a student at a different campus, you can work with UTM professors but please enroll in your campus's independent study or project course.

Rationale:
Add this note to clarify who can enrol in these courses.

Resources:
None.

CSC399Y5: Research Opportunity Program

Description:
Track Changes:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 399Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall / winter sessions in early February and students are invited to apply in early March. **See ~~Exp~~Re~~ri~~se~~nti~~a~~l and Inte~~r~~national~~ch** Opportunit~~ies~~**y Program (ROP)** for more details.

Rationale:
Directing students appropriately.

Resources:
None

CSC492H5: Computer Science Implementation Project

Note:
Only UTM students may enroll in this course. If you are a student at a different campus, you can work with UTM professors but please enroll in your campus's independent study or project course.

Rationale:
Add this note to clarify who can enrol in these courses.

Resources:
None

CSC493H5: Computer Science Expository Work

Note:
Only UTM students may enroll in this course. If you are a student at a different campus, you can work with UTM professors but please enroll in your campus's independent study or project course.

Rationale:
Add this note to clarify who can enrol in these courses.

Resources:
None.

CSC499Y5: Research Opportunity Program

Description:
Track Changes:

This course provides a richly rewarding opportunity for students in their third or fourth year to work in the research project of a professor in return for 499Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall / winter sessions in early February and students are invited to apply in early March. See ~~Exp~~Re~~ri~~se~~ntial a~~nd Inte~~r~~national~~**ch** Opportunit~~ies~~**y Program (ROP)** for more details.

Rationale:
Directing students appropriately.

Consultation:

Resources:
None

MAT399Y5: Research Opportunity Program

Description:
Track Changes:

This course~~s~~ provides a richly rewarding opportunity for students in their third **or fourth** year to work in the research project of a professor in return for 399Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall / winter sessions in early February and students are invited to apply in early March. See ~~Exp~~Re~~ri~~se~~nti~~a~~l and Inte~~r~~national~~**ch** Opportunit~~ies~~**y Program (ROP)** for more details.

Enrolment Limits:
Track Changes:

Priority is given to students enrolled in Mathematical Sciences Specialist or Major programs.

Prerequisites:

Track Changes:
~~**Departmental permission.**~~

Rationale:
House-keeping language update for clarity. “Departmental permission” was inaccurate as the administration is handled through EEU, and prerequisites are posted on their website (with input from us). Adding Enrolment Limits to mimic and be consistent with Reading Courses.

Consultation:
On 27-Jan-23 with MAT curriculum ctte & on 3-Feb-23 with MCS Chair(s).

Resources:
None

MAT499Y5: Research Opportunity Program

Description:
Track Changes:

This course~~s~~ provides a richly rewarding opportunity for students in thei**r third o**r fourth year to work in the research project of a professor in return for 499Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall / winter sessions in early February and students are invited to apply in early March. See ~~**Exp**~~Re~~**ri**~~se~~**nti**~~a~~**l and Inte**r~~**national**~~**ch** Opportunit~~**ies**~~**y Program (ROP)** for more details.

Enrolment Limits:
Track Changes:

Priority is given to students enrolled in Mathematical Sciences Specialist or Major programs.

Prerequisites:
Track Changes:
~~**Departmental permission.**~~

Rationale:
House-keeping language update for clarity. “Departmental permission” was inaccurate as the administration is handled through EEU, and prerequisites are posted on their website (with input from us). Adding Enrolment Limits to mimic and be consistent with Reading Courses.

Consultation:
On 27-Jan-23 with MAT curriculum ctte & on 3-Feb-23 with MCS Chair(s).

Resources:
None.

STA348H5: Introduction to Stochastic Processes

Enrolment Limits:

Track Changes:

Priority is given to students enrolled in **Applied** Statistics Specialist or Major programs.

Prerequisites:

Track Changes:

(STA260H5 or STA238H1 or ECO227Y5) and (**MAT223H5** or **MAT240H5**)

Rationale:

Adding relevant St. G or non-STA courses as they are often accepted when doing prerequisite checks anyway and are relevant/appropriate preparation for STA348H5. Updated “Enrolment Limits” language to accurately reflect name of discipline.

Consultation:

On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS relevant Chair(s).

Resources:

None.

STA378H5: Statistics Research Project

Enrolment Limits:

Track Changes:

~~**P**~~**Enr~~i~~o~~ril~~ment~~y~~** is ~~**g**~~**restri~~v~~ct~~n~~d** to students ~~**e**~~**in~~ro~~ **Appl~~l~~ied ~~in~~** Statistics Specialist or Major programs.

Prerequisites:

Track Changes:

~~**Departmental**~~**STA260H5 / STA261H1 / STAB57H3,** permission **of instructor, department** and a minimum CGPA of 2.5**0**.

Rationale:

STA260 is foundational 200-level course, necessary course to understand technical aspects of research topics/projects. Also changing ‘Enrolment Limits’ to reflect bit more limitation on students permitted to take courses, as those in specialists and majors would be better prepared/suited for such research projects.

Consultation:

On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

Resources:
None.

STA398H5: Statistics Research Project

Enrolment Limits:
Track Changes:
PEnri**r**ilmen**y** is **g**restri**v**cte**n**d to students **e**in**ro** Appl**l**ied **in** Statistics Specialist or Major programs.

Prerequisites:
Track Changes:

DepartmentalSTA260H5 / STA261H1 / STAB57H3, permission **of instructor, department** and a minimum CGPA of 2.50.

Rationale:
STA260H5 is foundational 200-level course, necessary course to understand technical aspects of research topics/projects. Also changing 'Enrolment Limits' to reflect bit more limitation on students permitted to take courses, as those in specialists and majors would be better prepared/suited for such research projects.

Consultation:
On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

Resources:
None.

STA399Y5: Research Opportunity Program

Description:
Track Changes:

This course provides a richly rewarding opportunity for students in their **seco**third and fourth year to work in the research project of a professor in return for **2**399Y course credit. Students enrolled have an opportunity to become involved in original research, learn research methods and share in the excitement and discovery of acquiring new knowledge. Participating faculty members post their project descriptions for the following summer and fall / winter sessions in early February and students are invited to apply in early March. See **Exp**Re**ri**se**nti**a**l and Inte**r**national**ch** Opportunit**ies**y Program (ROP) for more details.

Enrolment Limits:
Track Changes:
PrioRestric**y is giv**e**n**d to students enrolled in **Applied** Statistics Specialist or Major programs.

Prerequisites:

Track Changes:
~~**Permission of instructor and department.**~~

Rationale:
Updating wording to add clarity and accuracy. Removing co-reqs to be consistent with all ROP courses in MCS (this information will be provided to EEU for publishing in online doc on the ROP site instead). Also changing 'Enrolment Limits' to reflect bit more limitation on students permitted to take courses, as those in specialists and majors would be better prepared/suited for such research projects.

Consultation:
On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

Resources:
None.

STA478H5: Statistics Research Project

Enrolment Limits:
Track Changes:
~~**P**~~**Enr**~~**i**~~**o**~~**r**~~**il**~~**ment**~~**y**~~ is ~~**g**~~**restri**~~**v**~~**ct**~~**e**~~**nd** to students ~~**e**~~**in**~~**ro** **Appl**~~**l**~~**i**~~**ed** ~~**in**~~ Statistics Specialist or Major programs.

Prerequisites:
Track Changes:

~~**Departmental**~~**STA302H5 / STA302H1 / STAC67H3,** permission **of instructor, department** and a minimum CGPA of 2.5**0**.

Rationale:
STA302H5 is foundational course of any 400-level research topic/project, and needed in most data analysis. This will give the student a solid background to be successful in a reading course. Also changing 'Enrolment Limits' to reflect bit more limitation on students permitted to take courses, as those in specialists and majors would be better prepared/suited for such research projects.

Consultation:
On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

Resources:
None.

STA498H5: Statistics Research Project

Enrolment Limits:
Track Changes:

~~P~~Enr~~i~~o~~rl~~ment~~y~~ is ~~g~~restri~~v~~ct~~n~~d to students ~~e~~in~~ro~~ Appl~~l~~ied ~~in~~ Statistics Specialist or Major programs.

Prerequisites:

Track Changes:

~~Departmental~~**STA302H5 / STA302H1 / STAC67H3,** permission **of instructor, department** and a minimum CGPA of 2.5**0**.

Rationale:

STA302H5 is foundational course of any 400-level research topic/project, and needed in most data analysis. This will give the student a solid background to be successful in a reading course. Also changing 'Enrolment Limits' to reflect bit more limitation on students permitted to take courses, as those in specialists and majors would be better prepared/suited for such research projects.

Consultation:

On 31-Jan-23 with Assoc Chair, STA & on 3-Feb-23 with MCS chair(s).

Resources:

None.

1 Retired Course

CSC475H5: Introduction to Reinforcement Learning

Rationale:

Remove this course. It is a duplicate course with CSC415H5.

8 Minor Program Mod Full Reviews

ERMAJ1540: Applied Statistics - Major (Science)

Completion Requirements:

Track Changes:

7.0-7.5 credits are required.

First Year:

1. CSC108H5 < / li>
2. MAT102H5 < / li>
3. [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 < / li>
4. MAT223H5 or MAT240H5

Second Year:

1. MAT232H5 or MAT233H5 or MAT257Y5 < / li>
2. STA256H5 and STA258H5 and STA260H5

Higher Years:

1. STA302H5 and STA304H5 and STA305H5 < / li>
2. 1.0 credit from any 300 / 400 level STA course or CSC322H5 or (CSC311H5 or CSC411H5) or MAT302H5 or MAT311H5 or MAT332H5 or MAT334H5 or MAT344H5 or (MAT337H5 or MAT378H5)

NOTES:

1. MAT133Y5 is included in the credit count only if the student also completes MAT233H5 (in which case MAT232H5 is not required). < / li>
2. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses. < / li>
3. ECO220Y5 cannot be substituted for STA256H5 or STA258H5 and / or STA260H5. < / li>
4. ECO227Y5 can be substituted for STA256H5 and STA258H5, but not for STA260H5. < / li>
5. STA107H5 is highly recommended in first year, but it is not required. < / li>
6. MAT337H5 or MAT378H5 is highly recommended for students intending to pursue graduate level studies in statistics. < / li>
7. S**tudents in the Applied Statistics Major may take at most 0.5 credit of STA Reading or Independent Study courses at either the 300- or 400-level.**
8. **S**TA246H5 will not be permitted as a pre-requisite for any other 200+ level STA courses. In addition, STA246H5 cannot be used towards any program (s) in Applied Statistics or Mathematics. The course is intended only for students in Computer Science programs who will not need STA256H5 for other program requirements.

Rationale:

In 2022, there has been an uptick in application to Reading/Independent Study courses; with some students wanting to complete 2 in one term or greater than 2 throughout their degree. We wish to ensure that these courses remain meaningful, and rigorous, and thus wish to add limitations on the amount that students can take in our specialist/major programs.

Consultations:
On 31-Jan-23 with Assoc Chair, STA & on 3-FEb-23 with MCS Chair(s).

Resource Implications:
None.

ERMIN1540: Applied Statistics - Minor (Science)

Completion Requirements:

Track Changes:

4.5 - 5.0 credits are required.

First Year: MAT133Y5 or [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5

Higher Years:

1. ~~1~~**0**.~~0~~**5** credit ~~made up~~ of any ~~combination of (PSY201H5 and PSY202H5) or (BIO360H5 and BIO361H5) or SOC350H5 or ECO220Y5 or any~~ STA course~~s~~ other than STA256H5 and **STA258H5** and STA2~~58~~**60**H5 **(see Note #1)**
2. **MAT232H5 or MAT233H5 or MAT257Y5**
3. **STA256H5 and STA258H5 and STA260H5**
4. **1.0 additional credit of STA at the 300 / 400 level**

NOTES:

1. **For Higher ~~/~~Years #1 ~~>~~, st~~ar~~uident~~B~~s who include ~~NO~~ST~~E~~A107H5, STA220H5 and / or STA221H5:in this program are responsible for ensuring that these courses are completed~~B~~ prior to enrolling in STA256H5 and / ~~<~~or STA258H5. Students should be familiar ~~/~~with ~~>~~all the course prerequisites ~~/~~and exclusions**
2. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses. < / li>
3. ECO220Y5 cannot be substituted for STA256H5 and / or STA258H5 and / or STA260H5. < / li>
4. ECO227Y5 can be substituted for STA256H5 and STA258H5, but not for STA260H5. < / li>
5. ~~Students who include any of PSY201H5 or PSY202H5 or BIO360H5 or BIO361H5 or SOC350H5 or ECO220Y5 in this program are responsible for ensuring that these courses are completed prior to enrolling in STA256H5 and that all STA course prerequisites and exclusions are met. < / li>~~
6. ~~S~~TA246H5 will not be permitted as a pre-requisite for any other 200+ level STA courses. In addition, STA246H5 cannot be used towards any program (s) in Applied Statistics or Mathematics. The course is intended only for students in Computer Science programs who will not need STA256H5 for other program requirements. **< / li>**
7. **Note that Reading or Independent Study courses may not count towards the Applied Statistics minor.**

Description of Proposed Changes:

Adding STA260H5 to the list of mandatory 200-level STA courses in Applied Statistics minor; also rewording the program requirement needing non-STA courses to remove specificity/promotion of

statistics courses like PSY201H5, 202H5 etc., seeing as the related category now only needs 0.5 credits. One NOTE reworded to add clarity for course planning and exclusion purposes. Adding new NOTE to align with STA Reading Course change proposals (restriction of Reading Courses to only majors and specialists).

Rationale:

STA260H5 is an important statistics course. It is a prerequisite of most of 300+ level STA courses. Currently, STA304H5 and STA360H5 are the only 300/400 level courses that do not require STA260H5 as a prerequisite. Thus, this adjustment makes it possible for (STA minor) students to take most 300+ level courses. Adding new NOTE to align with STA Reading Course change proposals (restriction of Reading Courses to only majors and specialists).

Consultations:

On 31-Jan-23 with Assoc Chair, STA & on 3-FEb-23 with MCS Chair(s).

Resource Implications:

None.

ERSPE1540: Applied Statistics - Specialist (Science)

Completion Requirements:

Track Changes:

12.0-12.5 credits are required.

First Year:

1. CSC108H5 < / li>
2. MAT102H5 < / li>
3. [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 < / li>
4. MAT223H5 or MAT240H5

Second Year:

1. MAT232H5 or MAT233H5 or MAT257Y5 < / li>
2. MAT244H5 < / li>
3. STA256H5 and STA258H5 and STA260H5

Higher Years:

1. STA302H5 and STA304H5 and STA305H5 and STA348H5 < / li>
2. 2.0 credits of STA at the 300 / 400 level STA course < / li>
3. 2.0 credits from CSC322H5 or (CSC311H5 or CSC411H5) or MAT302H5 or MAT311H5 or MAT332H5 or MAT334H5 or MAT344H5 or (MAT337H5 or MAT378H5) < / li>
4. 1.0 credit of STA

NOTES:

1. MAT133Y5 is included in the credit count only if the student also completes MAT233H5 (in which case MAT232H5 is not required). < / li>
2. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses. < / li>

3. ECO220Y5 cannot be substituted for STA256H5 or STA258H5 or STA260H5. < / li>
4. ECO227Y5 can be substituted for STA256H5 and STA258H5, but not for STA260H5. < / li>
5. STA107H5 is highly recommended in first year, but it is not required. < / li>
6. MAT337H5 or MAT378H5 is highly recommend**ed** for students intending to pursue graduate level studies in statistic**s. < / li>**
7. **Students in the Applied Statistics Specialist may take at most 1.0 credit of STA Reading or Independent Study Courses at either the 300- or 400-level**. < / li>
8. STA246H5 will not be permitted as a pre-requisite for any other 200+ level STA courses. In addition, STA246H5 cannot be used towards any program (s) in Applied Statistics or Mathematics. The course is intended only for students in Computer Science programs who will not need STA256H5 for other program requirements.

Description of Proposed Changes:

Adding note to introduce limitation on number of Reading/Independent study courses specialist student can take.

Rationale:

In 2022, there has been an uptick in application to Reading/Independent Study courses; with some students wanting to complete 2 in one term or greater than 2 throughout their degree. We wish to ensure that these courses remain meaningful, and rigorous, and thus wish to add limitations on the amount that students can take in our specialist/major programs.

Consultations:

On 31-Jan-23 with Assoc Chair, STA & on 3-FEb-23 with MCS Chair(s).

Resource Implications:

None.

ERMIN1688: Computer Science - Minor (Science)

Completion Requirements:

Track Changes:

4.0 credits are required.

First Year: CSC108H5 and CSC148H5 and MAT102H5

Second Year:
1. CSC207H5 and CSC236H5
2. One of CSC209H5 or CSC258H5 or CSC263H5

Third and Fourth Years: 1.0 credit from any 300 / 400 level CSC course (except for CSC392H5 and CSC393H5 and CSC492H5 and CSC493H5) or GGR335H5 or GGR337H5 or GGR437H5. No more than 0.5 credit of GGR courses may count to this requirement.

NOTES:

1. Students in the CSC minor are limited to 1.5 credits of computer science courses at the 300 / 400-level. Enrolment in additional CSC courses is restricted to students in CSC specialist and major programs. < / li>
2. Only CSC148H5 and MAT102H5, taken at the UTM campus, will be accepted.
3. **CSC Minor can take no more than one of CSC392H5 or CSC393H5 or CSC492H5 or CSC493H5**

Rationale:

CS minors are not allowed to use reading courses to meet program requirements. At the same time, they are limited to 1.5 credits of computer science courses at the 300/ 400-level. CSC minors would have room to take 1.0 CSC required credits at the 300/400L when they only take a reading course.

Resource Implications:

None.

ERSPE1038: Information Security - Specialist (Science)

Completion Requirements:

Track Changes:

12.5-13.0 credits are required.

First Year:

1. CSC108H5 and CSC148H5 and ISP100H5 < / li>
2. MAT102H5 < / li>
3. [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5
4. MAT223H5 or MAT240H5

Second Year:

1. CSC207H5 and CSC209H5 and CSC236H5 and CSC258H5 and CSC263H5 < / li>
2. MAT224H5 or MAT240H5 < / li>
3. MAT232H5 or MAT257Y < / li>
4. STA246H5 or STA256H5 or ECO227Y5

Third Year:

1. CSC343H5 and CSC347H5 and CSC363H5 and CSC369H5 and CSC373H5 < / li>
2. MAT301H5 and MAT302H5

Fourth Year:

1. CSC358H5 or CSC458H5 < / li>
2. 1.0 credit from the following: CSC409H5 or CSC422H5 or CSC423H5 or CSC427H5 or CSC490H5 **or CSC495H5**

NOTES:

1. In addition to the course requirements above, students must complete an integrative learning experience. This requirement may be met by participating in the Professional Experience Year (PEY)

Co-op program * or by completing one of the following half-courses: CSC318H5, CSC367H5, CSC375H5, CSC376H5, CSC409H5, CSC420H5, CSC427H5, CSC477H5, CSC490H5.

* Please be advised that the PEY Co-op Program only applies to UTM Computer Science students in their second year of study. For more information about the PEY Co-op Program, including eligibility requirements, please visit the Experiential and International Opportunities page of the UTM Academic Calendar.

2. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses.

Rationale:

Adding CSC495H5 so that students would have more courses to choose from.

Resource Implications:

None

ERMAJ2511: Mathematical Sciences - Major (Science)

Completion Requirements:

Track Changes:

8.0 credits are required.

First Year:

1. MAT102H5 < / li>
2. [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 < / li>
3. MAT223H5 or MAT240H5

Second Year:

1. MAT202H5 and MAT244H5 < / li>
2. [(MAT232H5 or MAT233H5) and MAT236H5] or MAT257Y5 < / li>
3. MAT224H5 or MAT247H5

Higher Years:

1. MAT301H5 and (MAT334H5 or MAT354H5) < / li>
2. MAT337H5 or MAT378H5 or MAT392H5 or MAT405H5 < / li>
3. MAT305H5 or MAT311H5 or MAT332H5 < / li>
4. MAT302H5 or MAT315H5 or MAT344H5 < / li>
5. STA256H5 or **CSC363H5 or** 0.5 credit of MAT at the 300 /-400 level, except MAT322H5 < / li>
6. 0.5 additional credits in MAT at the 400 level

NOTES:

1. MAT137H5 and MAT139H5 are recommended. < / li>
2. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses. < / li>

3. Mathematical Majors are strongly encouraged to enroll in MAT240H5 followed by MAT247H5.

Rationale:

CSC363H5 covers sufficiently high-level theoretical mathematics that it should count for credit in all math programs. This change will typically benefit students already enrolled in CSC major or specialist, who also want to complete a MAT major. Also, this brings some consistency with what is allowed at the 300+ level in MAT specialist (can take 300+ level courses in CSC or STA, in addition to MAT).

Impact:

Possibly a somewhat higher demand for CSC363, but it is an advanced course so we do not anticipate that a large number of additional students will take it.

Consultations:

On 27-Jan-23 with MAT curriculum ctte & on 3-FEb-23 with MCS Chair(s).

Resource Implications:

None.

ERMIN2511: Mathematical Sciences - Minor (Science)

Completion Requirements:

Track Changes:

4.0 credits ~~**in MAT**~~ are required~~**, including 1.0 credit of MAT at the 300 / 400 level**~~.

First Year:

1. MAT102H5 < / li>
2. [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5

Second Year:

1. MAT223H5 or MAT240H5 < / li>
2. [MAT232H5 and (MAT202H5 or MAT224H5 or MAT236H5 or MAT240H5 or MAT244H5 or MAT247H5 or CSC236H5)] or MAT257Y5

Higher Years:

1. 1.0 credit **from the following:** MAT at the 300~~**+**~~ **/ 400** level **or CSC363H5**

NOTES:

1. MAT223H5 or MAT240H5 may be taken in the first year. < / li>
2. Students may replace the combination [(MAT132H5 or MAT135H5 or MAT137H5 or MAT157H5) and (MAT134H5 or MAT136H5 or MAT139H5 or MAT159H5)] or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 and MAT232H5 with the combination (MAT133Y5 and MAT233H5)
3. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses.

Description of Proposed Changes:

1) Adjustment to language at top of MAT minor for clarity. 2) Adding CSC363H5 to possible 300+ level courses that MAT minors can take.

Rationale:

1) [top note re credits]This is more consistent with MAT Specialist and Major (and CSC and Stats). The option of taking CSC236 means that "4.0 credits in MAT" is not accurate. 2) CSC363H5 covers sufficiently high-level theoretical mathematics that it should count for credit in all math programs. This change will typically benefit students already enrolled in CSC major or specialist, who also want to complete a MAT minor. Also this brings some consistency with what is allowed at the 300+ level in MAT specialist (can take 300+ level courses in CSC or STA, in addition to MAT).

Impact:

1) None. 2) Possibly a somewhat higher demand for CSC363, but it is an advanced course so we do not anticipate that a large number of additional students will take it.

Consultations:

On 27-Jan-23 with MAT curriculum ctte & on 3-FEb-23 with MCS Chair(s).

Resource Implications:

None.

ERSPE2511: Mathematical Sciences - Specialist (Science)

Completion Requirements:

Track Changes:

13.5 credits are required.

First Year:

1. CSC108H5 and CSC148H5 < / li>
2. MAT102H5 and MAT240H5 < / li>
3. [(MAT137H5 or MAT157H5) and (MAT139H5 or MAT159H5)] or MAT137Y5 or MAT157Y5

Second Year:

1. CSC236H5 < / li>
2. MAT202H5 and MAT244H5 and MAT247H5 and MAT257Y5 < / li>
3. STA256H5 and (STA258H5 or STA260H5)

Higher Years:

1. MAT301H5 and (MAT334H5 or MAT354H5) and MAT392H5 < / li>
2. MAT302H5 or MAT315H5 < / li>
3. 2.0 additional credit from MAT302H5 or MAT309H5 or MAT311H5 or MAT315H5 or MAT332H5 or (MAT337H5 or MAT378H5) or MAT344H5 < / li>
4. 1.0 additional credits in MAT at the 400 level (MAT401H5 is recommended) < / li>
5. 1.0 additional credits at the 300 / 400 level in CSC ~~**or MAT /**~~**or** STA or **MAT,** except **MAT322H5**
6. 0.5 additional credits in MAT at the 300+level, except MAT322H5

NOTES:

1. Mathematical Science Specialists are strongly encouraged to enroll in MAT157H5, MAT159H5, MAT257Y5, and MAT354H5. < / li>
2. Students are strongly encouraged to familiarize themselves with the 100-level calculus pre-requisites to select the correct courses. < / li>
3. Students may replace MAT257Y5 with [(MAT232H5 or MAT233H5) and MAT236H5], but if they do then MAT337H5 AND MAT405H5 are required as part of “Higher Years”. < / li>
4. Students who do not feel ready for MAT257Y5 in their Second Year, may wish to take MAT232H5 that year, and then take MAT257Y5 in their Third Year.

Rationale:

Grammatical change to align with wording in other MCS programs; the “/” between MAT and STA was unnecessary, redundant.

Consultations:

On 27-Jan-23 with MAT curriculum cttee & on 3-FEb-23 with MCS Chair(s).

Resource Implications:

None.

Biology (UTM), Department of

3 Course Modifications

BIO312H5: Plant Physiology

Contact Hours:

Track Changes: Lecture: ~~36~~24 / Tutorial: / Practical: ~~15~~27 / Seminar:

Rationale:

When the instructor began teaching this course in 2011 the department did not have all of the required lab equipment and therefore only three labs could be offered. As the course progressed and more equipment was purchased the labs increased to five labs, and finally to the current nine labs. The instructor has been teaching the course for the past few years with nine labs, but we have forgotten to revise the teaching hours in the calendar to match what is being taught in the lab. Lecture hours have also been redesigned since the beginning of the course so a reduction of lecture hours is also needed.

Consultation:

Biology Curriculum Committee and Prof. Ensminger (instructor)

Resources:

No new resources will be needed for the change in lab hours as we currently have all required equipment. TA hours will also not increase as we have been requesting the needed TA hours for the past few years.

BIO324H5: Plant Biochemistry

Prerequisites:

Track Changes:

~~**BIO203H5 and**~~ BIO206H5 and CHM120H5 or permission of instructor

Rationale:

The instructor would like to drop the BIO203 perquisite for this course. After teaching this course for the past five years, the instructor has realized that the reliance on BIO203 course material is not strict enough to justify a prerequisite that excludes many students and reduces enrollment. The instructor has also noticed that students who enrolled into the course with instructor permission (who had not completed BIO203 previously), have fared no worse than students who had completed BIO203. The course was also designed to attract CPS students and most students in that department are not required to complete BIO203. Dropping the BIO203 prerequisite would allow additional CPS students to enroll into the course.

Consultation:

Biology Curriculum Committee, Associate Chair of BIO

Resources:
None

BIO475H5: Virology

Prerequisites:
Track Changes:

BIO206H5 or permission of instructor ~~and~~**< /** ~~**(BIO370Y5 or BIO371H5 or BIO372H5)**~~ **p>**

Recommended Preparation:
Track Changes:
~~**BIO373H5**~~

Rationale:
The instructor would like to change the current prerequisites and drop the recommended prep. Instructor has realized that the current prerequisites and recommended prep are a bit too restrictive and limit the number of students that take the course. Given the focus of the material covered in BIO475, the BIO206 (Introductory Cell and Molecular Biology) course should be a more appropriate prerequisite and there is no need to list BIo373 as recommended prep.

Consultation:
BIO Curriculum Committee, Associate Chair

Resources:
None

4 Minor Program Mod Full Reviews

ERSPE2364: Biology - Specialist (Science)

Completion Requirements:

Track Changes:

13.5 credits are required, including at least 6.0 credits at the 300 / 400 level, of which 1.0 credit must be at the 400 level.

First Year:

1. BIO152H5 and BIO153H5 < / li>
2. CHM110H5 and CHM120H5 < / li>
3. (MAT132H5 and MAT134H5) or MAT134Y5 or (MAT135H5 and MAT136H5) or MAT135Y5 or (MAT137H5 and MAT139H5) or MAT137Y5 < / li>
4. 1.0 credit from: CLA201H5 or ENV100Y5 or (ERS101H5 or ERS120H5) or PHY136H5 or PHY137H5 or PSY100Y5 or WRI173H5 or WRI307H5 < / li> < / ol>

Note - (MAT132H5 and MAT134H5) - Calculus for Life Sciences is highly recommended.

Second Year:

1. BIO202H5 and BIO203H5 and BIO205H5 and BIO206H5 and BIO207H5 and BIO259H5

Third and Fourth Years:

1. BIO313H5 or BIO314H5 or BIO409H5 < / li>
2. BIO360H5 < / li>
3. 5.5 additional UTM BIO credits. At least 5.0 of these credits must be at the 300 level or above, of which at least 1.0 must be at the 400 level

   It is recommended that students in the specialist program include at least 0.5 credit from each of four of the following groups:

   - Ecology and Field Biology: BIO311H5 or BIO312H5 or BIO313H5 or BIO329H5 or BIO330H5 or BIO331H5 or BIO333H5 or BIO373H5 or BIO376H5 or BIO378H5 or BIO412H5 or BIO416H5 or BIO444H5 or BIO464H5 < / li>
   - Biology of Whole Organisms: BIO325H5 or BIO326H5 or BIO329H5 or BIO35**3H5 or BIO35**4H5 or BIO356H5 or BIO376H5 or BIO378H5 < / li>
   - Genetics and Evolution: BIO329H5 or BIO341H5 or BIO342H5 or BIO347H5 or BIO407H5 or BIO422H5 or BIO427H5 or BIO443H5 or BIO445H5 or BIO464H5 < / li>
   - Cell, Molecular and Developmental Biology: BIO314H5 or BIO315H5 or BIO324**H5 or BIO353**H5 or BIO362H5 or (BIO370Y5 or BIO371H5) or BIO368H5 or BIO372H5 or BIO374H5 or BIO375H5 or BIO380H5 or BIO404H5 or BIO407H5 or BIO408H5 or BIO417H5 or BIO419H5 or BIO422H5 or BIO458H5 or BIO475H5 or BIO476H5 or BIO477H5 < / li>
   - Physiology and Behaviour: BIO208H5 or BIO304H5 or BIO310H5 or BIO312H5 or (BIO318Y5 or BIO328H5) or BIO320H5 or BIO324 or BIO368H5 or BIO405H5 or BIO408H5 or BIO409H5 or BIO410H5 or BIO411H5 or BIO414H5 or BIO429H5 or BIO434H5 < / li> < / ul>

Up to 1.0 credit may be taken from the following biology-related courses: GGR227H5 or GGR305H5 or GGR307H5 or GGR309H5 or GGR311H5 or GGR312H5 or CHM347H5 or CHM361H5 or CHM362H5 or CHM372H5 or CHM373H5 or PHY332H5 or PHY333H5 or PSY290H5 or PSY355H5 or PSY357H5 or PSY392H5 or PSY395H5 or PSY397H5 or ANT334H5 or ANT336H5 or ANT340H5.

Additional courses: BIO361H5 or BIO400Y5 or BIO481Y5 or JCB487Y5

Description of Proposed Changes:

Addition of course option for program.

Rationale:

This is a bit of house cleaning in that we previously overlooked adding this course to the program as a course option. Instructor initiated request.

ERSPE0482: Comparative Physiology - Specialist (Science)

Completion Requirements:

Track Changes:

14.5 credits are required, including at least 5.0 at the 300 / 400 level, of which 1.0 credit must be at the 400 level.

First Year:

1. BIO152H5 and BIO153H5 < / li>
2. CHM110H5 and CHM120H5 < / li>
3. (MAT132H5 and MAT134H5) or MAT134Y5 or (MAT135H5 and MAT136H5) or MAT135Y5 or (MAT137H5 and MAT139H5) or MAT137Y5 < / li>
4. 1.0 credit from CLA201H5 or ENV100Y5 or ERS101H5 or PHY136H5 or PHY137H5 or PSY100Y5 or WRI173H5 or WRI307H5 < / li> < / ol>

Note: (MAT132H5 and MAT134H5) - Calculus for Life Sciences is highly recommended.

Second Year:

1. BIO202H5 and BIO203H5 and BIO205H5 and BIO206H5 and BIO207H5 and BIO208H5 and BIO209H5 and BIO259H5 < / li> < / ol>

Third and Fourth Years:

1. BIO304H5 and BIO310H5 and BIO312H5 and BIO360H5 and BIO409H5; < / li>
2. CHM242H5 and CHM243H5 < / li>
3. At least 2.0 credits from: BIO320H5 or BIO347H5 or BIO35**3H5 or BIO35**4H5 or BIO361H5 or BIO368H5 or BIO372H5 or BIO404H5 or BIO408H5 or BIO410H5 or BIO411H5 or BIO412H5 or

BIO414H5 or BIO417H5 or BIO419H5 or BIO422H5 or BIO429H5 or BIO481Y5 or CHM361H5 or CHM362H5 or JCB487Y5 or PHY332H5 or PHY333H5 or PSY290H5 or PSY395H5 < / li>
4. 1.0 additional BIO credit taken at U of T Mississauga campus < / li> < / ol>

No substitute statistics course will be allowed for BIO360H5. Students may take no more than 2.0 credits combined in ROP, Internship Program, or Individual Project / Thesis courses at the 300 / 400-level for credit toward their Biology program. Students must consult with the Undergraduate Advisor before enrolling in any St. George course that they wish to use for credit toward any Biology program.

Description of Proposed Changes:
Previously missed adding course as option.

Rationale:
Bit of house keeping in that we previously forgot to add this course to the program as a course option. Instructor initiated request.

ERSPE1020: Ecology and Evolution - Specialist (Science)

Completion Requirements:
Track Changes:
14.5 credits are required, including at least 6.0 credits at the 300 / 400 level, of which 1.0 credits must be at the 400 level.

First Year:

1. BIO152H5 and BIO153H5 < / li>
2. CHM110H5 and CHM120H5 < / li>
3. (MAT132H5 and MAT134H5) or MAT134Y5 or (MAT135H5 and MAT136H5) or MAT135Y5 or (MAT137H5 and MAT139H5) or MAT137Y5 < / li>
4. 1.0 credit from: CLA201H5 or ENV100Y5 or ERS101H5 or PHY136H5 or PHY137H5 or PSY100Y5 or WRI173H5 or WRI307H5 < / li> < / ol>

Note: (MAT132H5 and MAT134H5) - Calculus for Life Sciences is highly recommended.

Second Year:

1. BIO202H5 and BIO203H5 and BIO205H5 and BIO206H5 and BIO207H5 and BIO259H5 < / li> < / ol>

Third and Fourth Years: endItal

1. BIO313H5 and BIO342H5 and BIO360H5 and BIO443H5 < / li>
2. 1.0 credit from courses in organismal biology: BIO325H5 or BIO326H5 or BIO339H5 or BIO35**3H5 or BIO35**4H5 or BIO356H5 or (BIO370Y5 or BIO371H5) < / li>

3. 0.5 credit from field courses: BIO332H5 or BIO416H5 or BIO444H5 other 2-week Ontario Universities Program in Field Biology (OUPFB) Courses < / li>
4. 2.0 credits from core ecology / evolutionary biology courses: BIO311H5 or BIO329H5 or BIO330H5 or BIO331H5 or BIO333H5 or BIO341H5 or BIO361H5 or BIO373H5 or BIO376H5 or BIO378H5 or BIO406H5 or BIO427H5 or BIO445H5 or BIO464H5 or GGR312H5 or JBH471H5 < / li>
5. 1.0 credit from other UTM biology courses at the 300 / 400 level. < / li>
6. 1.0 credit from related courses from other departments: MAT222H5 or MAT232H5 or STA302H5 or STA322H5 or GGR227H5 or GGR278H5 or GGR305H5 or GGR307H5 or GGR309H5 or GGR311H5 or from courses listed in #4, #5 and #6 < / li> < / ol>

Description of Proposed Changes:

Previously missed addition of course to program.

Rationale:

Bit of house keeping as we had previously missed adding BIO353H5 as a course option to this program. Instructor initiated request.

ERMAJ1004: Paleontology - Major (Science)

Completion Requirements:

Track Changes:

First Year: BIO152H5, BIO153H5; CHM110H5, CHM120H5; (MAT132H5 and MAT134H5) * or MAT134Y5 or (MAT135H5 and MAT136H5) or MAT135Y5 or (MAT137H5 and MAT139H5) or MAT137Y5; ENV100Y5 / ERS101H5 / ERS120H5 / ERS111H5

* Note - MAT132H5 and MAT134H5 - Calculus for Life Sciences is highly recommended.

Second Year: BIO208H5, BIO209H5, BIO259H5, ERS201H5, ERS202H5, ERS203H5; ESS261H1

Third and Fourth Years: BIO354H5, BIO356H5, ERS325H5, (ESS331H1 **or ERS411H5).**

Description of Proposed Changes:

Addition of course option to fulfill program requirements.

Rationale:

ERS411H5 (Paloebiology) is a course offered through the UTM Earth Science department that we think will be a good addition to the Paleo program as a course option. Currently students are required to complete ESS331H1 on the St. George campus and there are times when traveling to the St.George campus is not possible for students. The addition of this course will give students the option of remaining at the UTM campus or attending the course downtown if they wish.

Anthropology (UTM), Department of

1 New Course

ANT280H5: Special Topics in Biological Anthropology and Archaeology

Contact Hours:
Lecture: 24 **/ Tutorial: / Practical: / Seminar:**

Description:

Special course on selected topics in biological anthropology and/or archaeology; focus of topic changes each year. The contact hours for this course may vary in terms of contact type (L,S,T,P) from year to year, but will be between 24-36 contact hours in total. See the UTM Timetable.

Distribution Requirements:
Social Science

Rationale:
Similar to our 300 level course shell, we are proposing a course shell at the 200 level so instructor can test out a new course before formally submitting it with a designated course code.

Consultation:
Circulated to department faculty members for feedback.

Resources:
Resource Form Submitted