

Sciences Divisional Curriculum Committee MINUTES

Date/Time: February 23rd, 2021 – 2:00-4:00PM

ATTENDANCE:

Members: Ilia Binder (MCS), Marc Dryer (BIO), Yen Du (Office of the Dean), Tracey Galloway (ANT), Jessica Hanley (Library), Lori Innes (Office of the Dean), Stuart Kamenetsky (PSY), Joseph Leydon (GGE), Heather Miller (Committee Chair; Office of the Dean), Lorretta Neebar (Office of the Registrar), Paul Piunno (CPS), Tracey Rogers (FSc), Laura Taylor (ISUP).

Guests: Teresa Cabral (FSc), Laura Cesario (ISUP), Sabrina Ferrari (GGE), Christina Fortes (CPS), , Diane Matias (BIO), Angela Sidoriak (ANT), Yvette Ye (MCS).

ITEM

1. Log In & Roll Call

Ms. Innes (Program & Curriculum Assistant and Recording Secretary) conducted the roll call and, with representatives from each of the Sciences departments present, the meeting began. Participants were asked to keep microphones on mute throughout the meeting and to use the “Raise Hand” function in Zoom should they wish to speak; Participants were notified that the meeting will be recorded for the purpose of note taking only and the recording will be deleted once the meeting minutes have been finalized.

2. For Information & Feedback

- **Proposing Permanent Changes to Course Mode of Delivery (Online, Hybrid)**
Professor Miller (Chair) informed the Committee that the Dean’s Office is awaiting feedback from the Vice-Provost, Academic Programs’ Office regarding the new guidelines for proposing permanent changes to course mode of delivery. To support this process, Professor Miller invited interested units to participate in a pilot project to bring forward proposals for changes to course mode of delivery. She noted that units will be asked to submit curriculum change proposals for the May Curriculum Committee meeting and to prepare additional documentation for the Vice- Provost’s Office. Interested units were asked to email Lori Innes, Yen Du and Heather Miller to indicate their desire to participate in the pilot project. Professor Miller clarified that the emergency codes for online teaching will continue into 2021-2022. Permanent changes to course mode of delivery will be for Fall 2022 and onward.

Professor Dryer inquired whether this initiative is tied to a larger institutional objective to increase online learning, and whether there is an expectation for more synchronous or asynchronous online learning. He also inquired about how the hybrid, online, and dual delivery options are defined. Professor Miller indicated that these are the types of questions that need to be clarified by the Vice-Provost's Office.

Prof. Kamenetsky inquired whether there could be flexibility to propose courses that could be delivered online or in-person from year-to-year. He also inquired whether all courses could have more flexibility to deliver select components online. Professor Miller confirmed that the course mode of delivery must be indicated in the calendar and that any year-to-year variation would need to be specified in the calendar. She also confirmed that there is an allowance for some online teaching within the in-person mode of delivery.

- **Pedagogical Tagging for Experiential Learning**

Professor Miller reminded the committee that the "EXP" notation was recently removed from the calendar and new tri-campus tags that will be implemented to accommodate new provincial reporting requirements.

Professor Miller presented the approved pedagogical tags for experiential learning (see the attached PowerPoint presentation). Prof. Miller confirmed that a copy of the slides and a supporting handout would be circulated to the committee following the meeting.

Committee members were asked to review the tags and to begin to conceptualize how they would be applied to their courses.

3. Presentation of Minor Curriculum Change Proposals

Department of Biology

Prof. Dryer presented 1 retired course on behalf of the Department of Biology. Details can be found in the attached SCI Curriculum Proposal Report.

No feedback or questions were raised.

Department of Mathematical and Computational Sciences

Prof. Binder presented 4 minor program modifications, 1 new course, 14 course modifications and 4 retired course on behalf of the Department of Mathematical and Computational Sciences. Details can be found in the attached SCI Curriculum Proposal Report.

Questions and feedback arose on the following items:

- **Computer Science Specialist** – Prof. Miller noted that, under Limited Enrolment, it should be specified that students require a “minimum of” 4.0 credits. This edit will be made in CM on behalf of the unit.

Institute for the Study of University Pedagogy

Prof. Taylor presented 6 new courses and 2 course modifications on behalf of the Institute for the Study of University Pedagogy. Details can be found in the attached SCI Curriculum Proposal Report.

Questions and feedback arose on the following items:

- **UTM111H5** – Prof. Dryer noted that faculty in Biology may be interested in teaching this course. Prof. Taylor confirmed that Special Topics courses offered through ISUP are open for all faculty to teach, including faculty from other units.

4. Meeting adjournment

With no additional questions or comments, the meeting was adjourned.



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SCIENCES

Curriculum Proposals Report

Meeting Date: February 23, 2021

Report Generated: February 19, 2021

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1 Retired Course:

JBG312H5: Landscape Ecology of Animal Population

Rationale:

CM Clean Up. This course was retired in 2011. This course was uploaded to CM in error.

4 Minor Program Modifications

Bioinformatics - Specialist (Science)

Completion Requirements:

14.0 credits are required.

First Year:

1. BIO152H5
2. CHM110H5 and CHM120H5
3. CSC108H5 and CSC148H5
4. MAT102H5
5. (MAT132H5 and MAT134H5) or (MAT135H5 and MAT136H5) or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5

Second Year:

1. BIO206H5 and BIO207H5
2. CHM242H5
3. CSC207H5 and CSC236H5 and CSC263H5
4. MAT223H5 or MAT240H5

Third Year:

1. MAT212H5 or MAT244H5
2. MAT232H5
3. (STA246H5 or STA256H5) and STA258H5

Fourth Year:

1. BIO314H5 and BIO372H5 and BIO477H5
2. CSC413H5 or CSC321H5 or CSC411H5 or CSC311H5
3. CSC343H5 and CSC373H5
4. MAT332H5
5. At least 1.0 credit from the following list of recommended courses, of which at least 0.5 credit must be at the 400-level: BIO315H5 or BIO341H5 or BIO370Y5 or BIO371H5 or BIO380H5 or BIO443H5 or BIO481Y5 or CBJ481Y5 or CHM361H5 or CSC310H5 or CSC338H5 or CSC363H5 or JCP410H5 or (STA302H5 or STA331H5) or STA348H5 or STA442H5

NOTES:

1. Students need to obtain permission from the course instructor to take BIO207H5 without the BIO153H5 prerequisite.
2. If BIO477H5 is not offered in the fourth year of a student's studies, he or she must take an additional 0.5 credit from the recommended 400-level courses.
3. Students intending to take CHM361H5 as one of their fourth year recommended courses must take CHM243H5 as a prerequisite course.
4. All third and fourth year CSC courses have a writing requirement. The recommended course for satisfying that requirement is CSC290H5, but students may substitute a different writing course. If a student wishes to substitute another course to satisfy the writing requirement, the student should consult a Bioinformatics Program Advisor.
5. The combination of (MAT134Y5/MAT135Y5/MAT137Y5/MAT157Y5 and MAT232H5) may be replaced by the combination of (MAT133Y5 and MAT233H5).

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resource Implications:

None.

Computer Science - Major (Science)

Enrolment Requirements:

Limited Enrolment — Enrolment in this program is limited to:

~~For students with a applying in 2020–2021 for program entry in the 2021–2022 Academic Year ; 4.0 credits are required, including the following:~~

- ~~1. CSC148H5 (see minimum grade note below) ;~~
- ~~2. MAT102H5 (see minimum of grade note below) ;~~
- ~~3. MAT134H5 or MAT136H5 or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5; and~~
- ~~4. A cumulative grade point average (CGPA); determined annually. It is never lower than 2.0.~~

~~For students applying in 2021–2022 (and beyond) for program entry in the 2022–2023 Academic Year (and beyond) ; 4.0 credits are required, including the following:~~

- ~~1. CSC148H5 (see minimum grade note below);~~
- ~~2. MAT102H5 (see minimum grade note below);~~
- ~~3. MAT134H5 or MAT136H5 or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5;~~
- ~~4. ISP100H5; and~~
- ~~5. A cumulative grade point average (CGPA), determined annually. It is never lower than 2.0.~~

NOTE: The minimum grade required in CSC148H5 and MAT102H5 is determined annually. It is never lower than 60%.

The Computer Science Specialist is a deregulated fees program and as such, tuition fees for students enrolled in this program are higher than for other regulated fee programs. Fees are charged on a program and not a per-course basis. See www.fees.utoronto.ca for more information on the fee structures.

Completion Requirements:

7.5–8.0 credits are required.

First Year:

1. CSC108H5 and CSC148H5 and ISP100H5
2. MAT102H5
3. (MAT132H5 and MAT134H5) or (MAT135H5 and MAT136H5) or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5
4. ~~For students entering the program in 2022–2023 (and beyond): ISP100H5~~

Second Year:

1. CSC207H5 and CSC236H5
2. 1.0 credit from the following CSC209H5 or CSC258H5 or CSC263H5
3. MAT223H5 or MAT240H5
4. STA246H5 or STA256H5
5. ~~For students entering the program in 2020–2021: CSC290H5~~

Higher Years:

1. 2.0 credits from the following: any 300/400 level CSC course (offered at UTM) or GGR335H5 or GGR337H5 or GGR437H5. At least 0.5 credit must come from 400-level courses, and no more than 0.5 credit of GGR courses may count to this requirement.

NOTE: In addition to the course requirements above, students must complete an integrative learning experience. This requirement may be met by participating in the PEY (Professional Experience Year) program. It can also be met by taking

at least one of the following half-courses: CSC318H5 or CSC367H5 or CSC375H5 or CSC409H5 or CSC420H5 or CSC427H5 or CSC477H5 or CSC490H5.

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty. Additional changes made reflect second phase of ISP100H5 implementation.

Resource Implications:

None.

Computer Science – Specialist (Science)

Enrolment Requirements:

Limited Enrolment — Enrolment in this program is limited to:

~~For students with a applying in 2020-2021 for program entry in the 2021-2022 Academic Year ; 4.0 credits are required, including the following:~~

- ~~1. CSC148H5 (see minimum grade note below) ;~~
- ~~2. MAT102H5 (see minimum grade note below) ;~~
- ~~3. MAT134H5 or MAT136H5 or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5; and~~
- ~~4. A cumulative grade point average (CGPA), determined annually. It is never lower than 2.0.~~

~~For students applying in 2021-2022 (and beyond) for program entry in the 2022-2023 Academic Year (and beyond) ; 4.0 credits are required, including the following:~~

- ~~1. CSC148H5(see minimum grade note below);~~
- ~~2. MAT102H5 (see minimum grade note below) ;~~
- ~~3. MAT134H5 or MAT136H5 or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5;~~
- ~~4. ISP100H5; and~~
- ~~5. A cumulative grade point average (CGPA), determined annually. It is never lower than 2.0.~~

NOTE: The minimum grade required in CSC148H5 and MAT102H5 is determined annually. It is never lower than 65%.

The Computer Science Specialist is a deregulated fees program and as such, tuition fees for students enrolled in this program are higher than for other regulated fee programs. Fees are charged on a program and not a per-course basis. See www.fees.utoronto.ca for more information on the fee structures.

Completion Requirements:

~~11.5-12.5~~ **12.0-12.5** credits are required.

First Year:

- CSC108H5 and CSC148H5 **and ISP100H5**
- MAT102H5
- (MAT132H5 and MAT134H5) or (MAT135H5 and MAT136H5) or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 **or MAT233H5**
- ~~For students entering the program in 2022-2023 (and beyond): ISP100H5~~

Second Year:

- CSC207H5 and CSC209H5 and CSC236H5 and CSC258H5 and CSC263H5
- MAT223H5 or MAT240H5
- MAT232H5 ~~or MAT233H5~~ or MAT257Y5
- STA246H5** or STA256H5
- ~~For students entering the program in 2020-2021: CSC290H5~~

Higher Years:

- CSC343H5 and CSC363H5 and CSC369H5 and CSC373H5
- CSC358H5 or CSC458H5
- 2.5 credits from the following: any 300/400 level CSC course (offered at UTM) or GGR335H5 or GGR337H5 or GGR437H5. At least 1.0 credit must come from 400-level courses, and no more than 1.0 credit of GGR courses may count to this requirement.

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 PEY (Professional Experience Year) program. It can also be met by taking at least one of the following half-courses: CSC318H5 or CSC367H5 or CSC375H5 or CSC409H5 or CSC420H5 or CSC427H5 or CSC477H5 or CSC490H5.
2. Students in the Computer Science Specialist program are advised to arrange their program so as to complete the requirement for the Major in Computer Science by the end of the third year.

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty. Additional changes made reflect second phase of ISP100H5 implementation.

Resource Implications:

None.

Information Security – Specialist (Science)

Enrolment Requirements:

Limited Enrolment — Enrolment in this program is limited to:

~~For students with a applying in 2020–2021 for program entry in the 2021–2022 Academic Year ; 4.0 credits are required, including the following:~~

- ~~1. CSC148H5 (see minimum grade note below) ;~~
- ~~2. MAT102H5 (see minimum of grade note below) ;~~
- ~~3. MAT134H5 or MAT136H5 or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5; and~~
- ~~4. A cumulative grade point average (CGPA), determined annually. It is never lower than 2.0.~~

~~For students applying in 2021–2022 (and beyond) for program entry in the 2022–2023 Academic Year (and beyond) ; 4.0 credits are required, including the following:~~

- ~~1. CSC148H5 (see minimum grade note below);~~
- ~~2. MAT102H5 (see minimum grade note below);~~
- ~~3. MAT134H5 or MAT136H5 or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5;~~
- ~~4. ISP100H5; and~~
- ~~5. A cumulative grade point average (CGPA), determined annually. It is never lower than 2.0.~~

NOTE: The minimum grade required in CSC148H5 and MAT102H5 is determined annually. It is never lower than 65%.

The Information Security Specialist is a deregulated fees program and as such, tuition fees for students enrolled in this program are higher than for other regulated fee programs. Fees are charged on a program and not a per course basis. See www.fees.utoronto.ca for more information on the fee structures.

Completion Requirements:

12.5–13.0 credits are required.

First Year:

1. CSC108H5 and CSC148H5 and ISP100H5
2. MAT102H5
3. (MAT132H5 and MAT134H5) or (MAT135H5 and MAT136H5) or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5
4. MAT223H5 or MAT240H5
5. ~~For students entering the program in 2022–2023 (and beyond): ISP100H5~~

Second Year:

1. CSC207H5 and CSC209H5 and CSC236H5 and CSC258H5 and CSC263H5
2. MAT224H5 or MAT240H5
3. MAT232H5 ~~or MAT233H5~~ or MAT257Y
4. STA246H5 or STA256H5
5. ~~For students entering the program in 2020–2021: CSC290H5~~

Third Year:

1. CSC343H5 and CSC347H5 and CSC363H5 and CSC369H5 and CSC373H5
2. MAT301H5 and MAT302H5

Fourth Year:

1. CSC358H5 or CSC458H5
2. 1.0 credit from the following: CSC422H5 or CSC423H5 or CSC427H5 or CSC490H5

NOTES: In addition to the course requirements above, students must complete an integrative learning experience. This requirement may be met by participating in the PEY (Professional Experience Year) program. It can also be met by taking at least one of the following half-courses: CSC318H5 or CSC367H5 or CSC375H5 or CSC409H5 or CSC420H5 or CSC427H5 or CSC477H5 or CSC490H5.

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty. Additional changes made reflect second phase of ISP100H5 implementation.

Resource Implications:

None.

1 New Course

CSC415H5: Introduction to Reinforcement Learning
Contact Hours: <i>Lecture: 24 / Tutorial: 12</i>
Description: Reinforcement learning is a powerful paradigm for modeling autonomous and intelligent agents interacting with the environment, and it is relevant to an enormous range of tasks, including robotics, game playing, consumer modeling and healthcare. This course provides an introduction to reinforcement learning intelligence, which focuses on the study and design of agents that interact with a complex, uncertain world to achieve a goal. We will study agents that can make near-optimal decisions in a timely manner with incomplete information and limited computational resources. The course will cover Markov decision processes, reinforcement learning, planning, and function approximation (online supervised learning). The course will take an information-processing approach to the concept of mind and briefly touch on perspectives from psychology, neuroscience, and philosophy.
Prerequisites: CSC311H5
Corequisites:
Exclusions: CSC498H5 (Winter 2021)
Recommended Preparation:
Rationale: We have been teaching this course as CSC498H5 in 2021 Winter. We want to make it permanent in the calendar.
Resources:

14 Course Modifications

CSC148H5: Introduction to Computer Science

Exclusions:

CSC148H1 or CSC150H1 or CSCA48H3 ~~or 1.5 CSC credits at the 200-level or higher~~

Rationale: Many students do need to re-take CSC148H5 to apply for CS posts.

Resources:

None.

CSC309H5: Programming on the Web

Prerequisites:

CSC209H5 and CSC263H5

Corequisites:

Previous: CSC343H5

New:

Rationale:

We are adding CSC263H5 since it is the pre-requisite for CSC343H5. It is not necessary to enforce the CSC343H5 co-requisite.

Resources:

No.

CSC310H5: Information Theory

Prerequisites:

CSC148H5 ~~and STA256H5~~ and MAT223H5 and (STA246H5 or STA256H5)

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resources:

None.

CSC311H5: Introduction to Machine Learning

Prerequisites:

CSC207H5 and (MAT223H5 or MAT240H5) and MAT232H5 and (STA246H5 or STA256H5)

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resources:

None.

CSC358H5: Principles of Computer Networks

Exclusions:

CSC358H1 or CSC457H1 ~~CSC458H1~~

Rationale:

A couple years ago, St George changed around their networking courses. Now, the course that we want to exclude is CSC457H1.

Resources:

No.

CSC375H5: Algorithmic Intelligence in Robotics

Prerequisites:

CSC209H5 and (MAT223H5 or MAT240H5) and (STA246H5 or STA256H5) and CSC376H5

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resources:

None.

CSC384H5: Introduction to Artificial Intelligence

Prerequisites:

CSC324H5 and (STA246H5 or STA256H5)

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resources:

None.

CSC428H5: Human-Computer Interaction (SCI)

Prerequisites:

CSC318H5 and (STA246H5 or STA256H5) and (CSC207H5 or proficiency in Java)and (CGPA 3.0 or enrolment in a CSC subject ~~POSt~~ ~~POSt~~).

Recommended Preparation:

A course in PSY and CSC209H5 ~~CSC209H5~~.

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resources:

None.

CSC477H5: Introduction to Mobile Robotics

Prerequisites:

CSC209H5 and (MAT223H5 or MAT240H5) and MAT232H5 and (STA246H5 or STA256H5) and CSC376H5

Rationale:

We are adding STA246H5 as an equivalent course to STA256H5, taught by a CS faculty.

Resources:

None.

CSC493H5: Computer Science Expository Work**Exclusions:**

Previous: CSC494H1 or CSC495H1 or CSCD94H3 or CSCD95H3

New:

Rationale:

The exclusion courses listed are all Independent Study/ capstone courses. They are not exclusive to each other.

Resources:

No.

MAT322H5: Mathematical Modelling in Biology**Exclusions:**

MAT388H5 (Fall 2019 and Fall 2020) or MAT244H5 or MAT244H1 or MATB44H3.

Rationale: MAT322H5 had been offered as topic course MAT388H5 in Fall 2019 and Fall 2020 only.

Resources:**STA107H5: An Introduction to Probability and Modelling****Corequisites:**

Previous: (MAT132H5 and MAT134H5) or (MAT135H5 and MAT136H5) or MAT134Y5 or MAT135Y5 or MAT137Y5 or MAT157Y5 or MAT233H5

New:

Rationale: This is a basic statistics course that does not require any Calculus background.

Resources:

No.

STA215H5: Introduction to Applied Statistics**Exclusions:**

STA218H5 or STA220H5 or STA220H1 or STA256H5 or STA257H5 or STAB22H3 or ECO220Y5 or ECO227Y5 or PSY201H5 or PSYB07H3 or SOC350H5

Rationale: STA220H1 is equivalent to STA220H5 and STAB22H3. Thus, it is needed to be added to the exclusion list.

Resources:

No.

4 Retired Courses

MAT100H5: Prep. for University Calculus
Rationale: This course only been offered once, many years ago, and we do not plan to offer it again in the future.
STA219H5: Mathematics of Investment and Credit
Rationale: This course hasn't been offered for at least the last 5 years. It's not a part of our Statistics specialist/major programs.
STA311H5: Statistics for Forensic Sciences II
Rationale: This course hasn't been offered for at least the last 5 years. We do not plan to offer it again in the future. It is not a part of our Statistics Specialist or Major program requirement.
STA390H5: Modern Applied Statistics
Rationale: This course hasn't been offered for at least the last 5 years. We do not plan to offer it again in the future. It is not a part of our Statistics Specialist or Major program requirement.

Study of University Pedagogy, Institute for the

6 New Courses

ISP299H5: Research Opportunity Program
Contact Hours:
Description: <p>This course provides a richly rewarding opportunity for students in their second year to participate in the research project of a faculty member in return for 299H course credit. Based on the nature of the project, projects may satisfy the Humanities, Sciences or Social Sciences distribution requirement. Students enrolled have an opportunity to become involved in original research, learn 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 Experiential and International Opportunities for more details.</p>
Prerequisites:
Corequisites:
Exclusions:
Recommended Preparation:
Rationale: <p>Our faculty have received feedback from students interested in pursuing further studies with our department, but our current opportunities are limited to our first year courses. We are creating ROP course codes to allow students to engage with our faculty research.</p>
Consultation: <p>Current faculty have confirmed that there are opportunities available for ROPs.</p>
Resources:

ISP299Y5: Research Opportunity Program

Contact Hours:
Description: <p>This course provides a richly rewarding opportunity for students in their second year to participate in the research project of a faculty member in return for 299Y course credit. Based on the nature of the project, projects may satisfy the Humanities, Sciences or Social Sciences distribution requirement. Students enrolled have an opportunity to become involved in original research, learn 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 Experiential and International Opportunities for more details.</p>
Prerequisites:
Corequisites:
Exclusions:
Recommended Preparation:

Rationale:

Our faculty have received feedback from students interested in pursuing further studies with our department, but our current opportunities are limited to our first year courses. We are creating ROP course codes to allow students to engage with our faculty research.

Consultation:

Current faculty have confirmed that there are opportunities available for ROPs.

Resources:

ISP399H5: Research Opportunity Program

Contact Hours:**Description:**

This course provides a richly rewarding opportunity for students in their third year to participate in the research project of a faculty member in return for 399H course credit. Based on the nature of the project, projects may satisfy the Humanities, Sciences or Social Sciences distribution requirement. Students enrolled have an opportunity to become involved in original research, learn 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 [Experiential and International Opportunities](#) for more details.

Prerequisites:**Corequisites:****Exclusions:****Recommended Preparation:****Rationale:**

Our faculty have received feedback from students interested in pursuing further studies with our department, but our current opportunities are limited to our first year courses. We are creating ROP course codes to allow students to engage with our faculty research.

Consultation:

Current faculty have confirmed that there are opportunities available for ROPs.

Resources:

ISP399Y5: Research Opportunity Program

Contact Hours:**Description:**

This course provides a richly rewarding opportunity for students in their third year to participate in the research project of a faculty member in return for 399Y course credit. Based on the nature of the project, projects may satisfy the Humanities, Sciences or Social Sciences distribution requirement. Students enrolled have an opportunity to become involved in original research, learn 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 [Experiential and International Opportunities](#) for more details.

Prerequisites:
Corequisites:
Exclusions:
Recommended Preparation:
Rationale: Our faculty have received feedback from students interested in pursuing further studies with our department, but our current opportunities are limited to our first year courses. We are creating ROP course codes to allow students to engage with our faculty research.
Consultation: Current faculty have confirmed that there are opportunities available for ROPs.
Resources:

ISP490Y5: Independent Reading

Contact Hours:
Description: <p>This course is intended to offer students advanced supervised reading and research experience within the areas of writing studies, numeracy, and pedagogy. Students interested in this course should obtain a supervisor before applying directly to the Institute for the Study of University Pedagogy.</p>
Prerequisites:
Corequisites:
Exclusions:
Recommended Preparation:
Rationale: We would like to offer more opportunities for students to engage with research in topics relating to writing studies, numeracy, and pedagogy.
Resources:

ISP491H5: Independent Reading

Contact Hours:
Description: <p>This course is intended to offer students advanced reading and research experience within the areas of writing studies, numeracy, and pedagogy. Students interested in this course should obtain a supervisor before applying directly to the Institute for the Study of University Pedagogy.</p>
Prerequisites:

Corequisites:
Exclusions:
Recommended Preparation:
Rationale: We would like to offer more opportunities for students to engage with research in topics relating to writing studies, numeracy, and pedagogy.
Resources:

2 Course Modifications

UTM111H5: utmONE: Tools of the Trade

Title:

utmONE: Special Topics at ~~Tools of~~ the Intersection of Science and Social Science ~~Trade~~

Description:

Previous: 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 students will participate in a series of tutorials that will help them build foundations for academic success (such as understanding the value of higher education, developing a growth mindset, and finding passion) . [24L, 12T]

New:

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.

Exclusions:

UTM110H5 or UTM112H5 or **UTM113H5** 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:

The utmONE First-Year Transition course codes range from 110-119. To provide room for future topics and to permit more frequent changes of topics, we are changing 110, 111, and 112 into special topics courses for the intersections of Social Science and Humanities (110), Social Science and Science (111), and Humanities and Sciences (112). Course goals and skills development in these courses remain unchanged and will be maintained across topic offerings. The specific topics that had been taught using those numbers have not been taught in five years.

Resources:

UTM112H5: utmONE: Power of Expression

Title:

utmONE:Special Topics at the Intersection ~~Power of~~ Science and Humanities ~~Expression~~

Description:

Previous: This course asks big questions about what creative expression is, how it influences society, and what role it plays in people ' s lives . Students will explore expression as social and cultural production, as intervention, and as a tool for social dialogue through assignments and small group activities that develop and refine key skills relevant to the humanities and social sciences. As part of this course students will participate in a series of tutorials that will help them build foundations for academic success (such as understanding the value of higher education, developing a growth mindset, and finding passion) . [24L, 12T]

New:

This course brings together first-year students to explore a current topic or problem at the intersection of science and humanities 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.

Exclusions:

UTM110H5 or UTM111H5 or **UTM113H5** 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

Distribution Requirements:

Humanities, ~~Social~~ Science

Rationale:

The utmONE First-Year Transition course codes range from 110-119. To provide room for future topics and to permit more frequent changes of topics, we are changing 110, 111, and 112 into special topics courses for the intersections of Social Science and Humanities (110), Social Science and Science (111), and Humanities and Sciences (112). Course goals and skills development in these courses remain unchanged and will be maintained across topic offerings. The specific topics that had been taught using those numbers have not been taught in five years.

Resources:

PEDAGOGICAL TAGGING FOR EXPERIENTIAL LEARNING:

**CANONICAL/CURRICULAR – UTM
CALENDAR**

VS.

**NON-CANONICAL/INSTRUCTIONAL –
SYLLABUS**



Adapted from VPIUE ppt, Jan 27, 2021

OVERVIEW OF VICE-PROVOST'S EXPERIENTIAL LEARNING 'TAGGING' SYSTEM

Pedagogical tagging: 2 levels

Types in UTM Calendar - Canonical/Curricular = always same

- a) Partnership-based
- b) University-based

Sub-types in Syllabus - Non-canonical/Instructor = variable

(eventually in Course Information System, CIS)

**4 Partnership-based sub-types &
6 University-based sub-types**



Adapted from VPIUE ppt, Jan 27, 2021

POTENTIAL USES:

- **Enables units to add Experiential Learning Types to their Curriculum Maps** with simple, standard codes
- Enables **rapid program/unit/divisional identification** of and **reporting** on a broad range of curricular experiential activities (e.g., for Self-Studies)
- **Identifies courses for targeted information** on pedagogical supports or partnership-related requirements
- Supports **SMA3 reporting requirements**
- Including only Types in Calendar (Canonical/CM) **allows for year-over-year/offering-by-offering change in experience sub-types, and different approaches by different instructors**



Adapted from VPIUE ppt, Jan 27, 2021

CAUTIONS:

- **Governance action is required** to add/remove/change an experiential component in Calendar (Canonical/CM)
 - A strength for reducing course drift
 - Requires divisional oversight to ensure local compliance
- Syllabus (Instructor/CIS) sub-type data is **reliant on instructor engagement**
 - Requires instructors to understand and identify various forms of experiential learning
 - Potential for sub-type data gaps/inaccuracies for curricular review, reporting, targeted support
- Restricted to a **single sub-type for each course (once in CIS)**
- Clarify integration of **non-credit bearing work terms (e.g. co-op work term)** into model



Adapted from VPIUE ppt, Jan 27, 2021

CANONICAL/CURRICULUM/CALENDAR TYPES

- in Curriculum Management (CM)

- New 'course delivery' field in CM to tag courses with required pedagogical component
- Divisions to select the required pedagogical component type:
 - **Partnership-based:** All students engage with a non-University organization or individual to achieve course learning outcomes
 - **University-based:** All students engage solely with University course instructor(s) to achieve course learning outcomes
- Divisions cannot select any delivery sub-types in CM



Adapted from VPIUE ppt, Jan 27, 2021

SUB-TYPES IN SYLLABUS

(eventually in Course Information System - CIS)

- **For now:** the resource handout provides detailed definitions for each sub-type; instructors will choose and indicate on their syllabus (as desired).
 - for Partnership-based: Academic Internship; Professional Practicum; Partnered Field Experience; Organization-Partnered Experience
 - for University-based: Performance & Artistic Productions; Simulated Work Experience; Non-partnered Field Experience; Advanced Design; Advanced Laboratory; Research-Intensive
- **Once CIS is in place at UTM:**
 - 'Course delivery' tag from CM will be auto-populated in CIS
 - Instructors will have the **option** of selecting the sub-type in CIS (a linked resource page will provide definitions)
 - A sub-type would only be selected if the instructor intends for all students in the course to participate



Adapted from VPIUE ppt, Jan 27, 2021