**FOR RECOMMENDATION** **PUBLIC** **OPEN SESSION**

**TO:** UTM Academic Affairs Committee

**SPONSOR:** Professor Amrita Daniere, Vice-Principal Academic and Dean
**CONTACT INFO:** 905-828-3719, vpdean.utm@utoronto.ca

**PRESENTER:** Professor Heather Miller,Vice-Dean, Teaching & Learning
**CONTACT INFO:** 905-569-4768, vdteachlearn.utm@utoronto.ca

**DATE:** February 4, 2021 for February 11, 2021

**AGENDA ITEM:** 3

**ITEM IDENTIFICATION:**

Minor Modification Graduate Curriculum Changes, Master of Biotechnology Program, UTM

**JURISDICTIONAL INFORMATION:**

Under section 5.6 of its *Terms of Reference*, the Academic Affairs Committee is responsible formajor and minor modifications to existing degree programs. All major modifications shall be reported annually for information to the appropriate body of Governing Council.

**GOVERNANCE PATH:**

1. **UTM Academic Affairs Committee [For Aproval] (February 11, 2020)**

**PREVIOUS ACTION TAKEN:**

No previous action was taken on this proposal.

**HIGHLIGHTS:**

The Graduate Minor Modification proposals (enclosed) outline Minor Modifications to existing graduate programs and courses. These curricular changes are intended to have significant positive effects on a cumulative basis, but are considered to be minor changes in the context of the UTQAP. Proposals for changes brought forward at this meeting were reviewed by the IMI Graduate Curriculum Committee in December 2020 as well as January 2021 and will come into effect during the 2021-2022 Academic Year.

**Master of Biotechnology (MBiotech) Program**

Offered through the University of Toronto Mississauga's (UTM) Institute for Management & Innovation (IMI), the Master of Biotechnology (MBiotech) Program is proposing three (3) changes:

1) A change to the program requirements of both fields in the Program (Biopharmaceuticals and Digital Health Technology) that will now require students to complete an additional half-credit elective course, bringing the total required credits for the program to 9.5 (from the current 9.0). This proposed change is in direct response to the recommendations made in the recent external reviewer report of the Program, which endorsed the introduction of new electives to highlight current research of the MBiotech faculty. The introduction of an additional elective requirement will allow the Program to expand their elective offerings and encourage students to explore the advanced content offered across elective courses to enhance their employability and expertise. Students will be able to complete this additional elective course with minimal disturbance to their schedule as there is currently space in the course timetable due to recent changes to two of their courses (one offered in the first year of the program; the other in the second year), which were previously offered across the Fall and Winter/ Spring term but is now offered entirely in the Fall. This allows for time in the Winter/ Spring term of either year for students to complete this new requirement. This proposed program change will take effect September 2021 and apply to students beginning their MBiotech studies in May 2022. Current students in the Program will be encouraged to take advantage of the expanding elective options available to them, but will not be required to do so for program completion.

2) A new course, BTC1889H Deep Learning in Health, to be offered as an elective option within the Digital Health Technology (DHT) field. Deep Learning in Health is an advanced course in machine learning that is focused on the application of neural networks in a health context. Students will learn about the limiations and the appropriate use of neural networks by working on health and biological related data sets. This proposed course addresses DHT student interest in advanced data science in addition to bolstering the elective course options in this field.

3) A course title change for BTC1899H from *Data Science and Digital Health Technology* to *Data Health Technology*. This name change more accurately reflects the content of the course, signaling to students that the overwhelming theme of the course is digital health.

**FINANCIAL IMPLICATIONS:**

There are no net implications for the campus' operating budget.

**RECOMMENDATION:**

Be it Resolved,

THAT the curriculum changes in the Master of Biotechnology Program, offered by the Institute for Management and Innovation (IMI), recommended by the Vice-Principal Academic & Dean, Professor Amrita Daniere, and as described in the proposals dated January 25, 2021, be approved, effective on September 1, 2021.

---

**DOCUMENTATION PROVIDED:**

Change to an Existing Graduate Program: Master of Biotechnology FCE increase

New Graduate Course in the Master of Biotechnology Program: BTC1889

Changes to an Existing Graduate Course – Master of Biotechnology Program: BTC1899 name change

# University of Toronto
# Minor Modification Proposal:

## Change to an Existing Graduate Program or Collaborative Specialization

This template should be used to bring forward all proposals for minor modifications to program or admissions requirements for existing graduate programs or collaborative specializations under the University of Toronto's Quality Assurance Process.

| | |
|---|---|
| **Program/Collaborative Specialization being modified:**<br>E.g., MSc in Immunology | Master of Biotechnology (MBiotech) |
| **Graduate unit:** | Institute for Management & Innovation (IMI) |
| **Faculty/academic division:** | University of Toronto Mississauga (UTM) |
| **Dean's office contact:** | Lori Innes<br>Program & Curriculum Assistant<br>Lori.innes@utoronto.ca<br><br>Yen Du<br>Program & Curriculum Officer<br>Yen.du@utoronto.ca |
| **Version date:** | 25 January, 2021 |

# 1 Summary

- Check box for type(s) of change.
- Summarize what the change is, including details about any changes to FCEs.

| | | | |
|---|---|---|---|
| | Changing admission requirements | | Renaming field, concentration or emphasis* |
| **X** | Changing program requirements | | Renaming of program or collaborative specialization (please notify VPAP before governance) |
| | Changing timing of program requirements | | Creating a new emphasis |
| | | | Changes to programs affecting an MOA |
| Summary:<br>*Graduation requirements for the MBiotech Program are proposed to increase from 9.0 FCE (full course equivalent) to 9.5 FCE. This change is proposed to both the Biopharma (BioPh) and Digital Health Technology (DHT) fields of the Program. The additional 0.5 FCE will be fulfilled from elective course options. This change is aimed at supporting the Program's broadening electives roster, which is designed to increase students' exposure to advanced content.* | | | |

* Anything with a changed/new name requires consultation with VPAP Office prior to governance; if name change implies significant change to what is being offered or how it is being offered, this may be a major modification or new program.

# 2 Effective Date of Change

This proposed change will be effective September 1, 2021 and reflected in the 2021-2022 SGS Calendar. The first group of MBiotech students that will be required to complete 9.5 FCE will be those beginning their studies in May 2022.

# 3 Academic Rationale

- What are the academic reasons for the change?

Following on from the Dean's Response to the external review of MBiotech, dated 28-Feb 2020, and aligning with the **Implementation Plan** presented therein, which identifies in the *Immediate* and *Medium Term* as action items: ***the introduction of new electives to highlight research faculty,*** the program proposes to increase the graduation requirements for all MBiotech students from 9.0 FCE to 9.5 FCE, so as to accommodate and support these extra elective offerings. Currently, MBiotech students in the BioPh field are required to earn 8.0 FCE of mandatory courses and 1.0 FCE of elective courses, but our operational experience shows that the vast majority (99+%) of graduating students fill the elective requirement by completing **BTC1920Y, Work Term III**, which is the final 4-month stretch of their year-long co-op placement work terms. Additional electives have been routinely earned by enthusiastic students that have supported the sustained success of early elective offerings, such as **BTC1860H, Generations of Advanced Medicine: Biologics in Therapy (GAMBiT)**, but as the breadth of our electives offerings has widened, it has inevitably become increasingly difficult to secure sufficient enrolments across all of the electives to justify their viability from a budgetary perspective. To support the electives envisioned by the **Implementation Plan**, we are proposing a desirable solution, then, is to alter the graduation requirements to ensure that *all* students must opt for 0.5 FCE of non-Work Term elective credits to augment their **Work Term III** credit (1.0 FCE). DHT stream students (unlike the BioPh stream) are currently required to earn 0.5 FCE of non-Work Term electives, but would in this proposal be required to earn instead 1.0 FCE of electives to maintain graduation requirement parity with the BioPh stream. This will ensure that **every** MBiotech student will be exposed to the advanced content offered by our electives, in our view enhancing their employability and expertise just prior to graduation. In terms of curriculum timing, **BTC1600H** and **BTC1610H, Biopartnering I & II** (our mandatory Year 1/Year 2 joint seminar series, mandatory to both the BioPh and DHT streams) were previously scheduled across

both the Fall and Winter/Spring terms but have, in recent years, moved to a more conventional one-term scheduling with both courses being completed entirely in the Fall term. This releases curriculum time in the Winter/Spring of both Years 1 & 2, irrespective of stream, to accommodate the electives, such that all students have capacity to take them without creating an additional burden. Hence, class time previously committed to BTC1600H and BTC1610H will be replaced by an elective slot.

# 4 Impact on Students

- Outline the expected impact on continuing and incoming students, if any, and how they will be accommodated.

Current MBiotech students (in either the Biopharma or Digital Health Technology fields) will not be impacted by this change. Their program requirements will remain at 9.0 FCE. They are, and will continue to be, encouraged to take advantage of the expanding elective course options in the Program but will not be required to take an additional 0.5 FCE to complete their MBiotech Program.

Students beginning their Program in May 2022 (and beyond) will be required to complete the 9.5 FCE for graduation. If approved, this change will be reflected in the 2021-2022 SGS Calendar as well as the MBiotech website and any other program materials by September 2021 at the latest. This will provide applicants ample notice of the program requirements. As discussed above, there currently exists room in both Year 1 and Year 2 of the Program, in both streams, for an additional half-credit course (due to changes in BTC1600H and BTC1610H, which are currently mandatory to both BioPh and DHT streams).

# 5 Consultation

- Describe any consultation undertaken with the students, faculty, Dean and chair/director. Address any major issues discussed.

The MBiotech Director and Associate Director have consulted with the IMI Director and have presented this proposal to the IMI Curriculum Committee. The student body has been notified of the administration’s intentions for the change, and student reps have not reported to any concerns.

# 6 Resources

- Describe any resource implications of the change(s) including, but not limited to, faculty complement, space, libraries and enrolment/admissions).

| |
|---|
| The MBiotech program has undergone a major reorganization that has released sufficient capital in our current budget to enable the indirect funding of **two** electives. In line with our **Implementation Plan**, we are deploying our unit's cross-appointed research Faculty (Profs. Currie in BIO & Chen in MGT) to teach the advanced content offered in the electives, whilst recruiting sessional lecturers to instruct two core curriculum courses. The elective courses are pre-existing shells with a broad mandate (**Topics in Biotechnology**) that were not offered until this year; and the content has been tailored to the specialities of these research Faculty members. Both courses will enable our pre-tenure Faculty to fulfil their teaching loads with the MBiotech Program whilst playing to their strengths. |

# 7 Governance Approval

| | |
|---|---|
| **Unit sign-off** | IMI Graduate Curriculum Committee<br>January 11, 2021 |
| **Dean's office sign-off** | Heather Miller, Vice-Dean Teaching & Learning<br>January 25, 2021 |
| **Faculty/division council approval** | UTM Academic Affairs Committee (AAC)<br>February 11, 2021 |

# Appendix A: Calendar Entry

Please use track changes to indicate where changes have been made.

## 7.1 Master of Biotechnology

### 7.1.1 Program Description

The MBiotech is an interdisciplinary course-based professional degree program. Students come from various science and/or engineering backgrounds with the common goal of pursuing a career in the biotechnology, medical device, and pharmaceutical industries.

The program meets the evolving needs of students and this global industry sector. Lecturers from various University of Toronto Faculties, biotechnology and pharmaceutical industries, and governmental agencies provide a truly interdisciplinary learning experience. Introductory laboratory courses and a year-long work internship round out the broadly based learning environment.

The program is a full-time, course-based master's degree which is launched in May each year.

### 7.1.2 Field: Biopharmaceutical

#### 7.1.2.1 Minimum Admission Requirements

- Applicants are admitted under the General Regulations of the School of Graduate Studies. Applicants must also satisfy the Institute for Management & Innovation's additional admission requirements stated below.
- An appropriate bachelor's degree from a recognized university in any area of biological sciences, chemistry, engineering, or related field with a minimum mid-B standing in the final two years of study.
- Applicants who have completed their studies outside of Canada must also submit their Graduate Record Examination (GRE) Subject Test scores and meet the SGS minimum standards for English proficiency.
- The MBiotech program also evaluates applicants on their letter of intent, CV, three references, and both a science and business interview.

#### 7.1.2.2 Program Requirements

- Students must complete **9.~~0~~5 graduate full-course equivalents (FCEs)** over a 24-month period:
    - 4.5 FCEs MBiotech courses (includes credits for Seminar and Placement)
    - 3.5 FCEs Biopharmaceutical courses

  - 1.05 FCE elective course.
- An ongoing **seminar series** led by university, industry, and government specialists links all the participants with the academic, practical, and applied aspects of the program.

### 7.1.2.3 Program Length

6 sessions full-time (typical registration sequence: S/F/W/S/F/W)

### 7.1.2.4 Time Limit

3 years full-time

### 7.1.2.5 Required Courses

A general description of each required course is posted on the Biotechnology website.

| | |
|---|---|
| BTC 1600H | Biopartnering I |
| BTC 1610H | Biopartnering II |
| BTC 1700H | Molecular Biology Laboratory |
| BTC 1710H | Biomaterials and Protein Chemistry Theory |
| BTC 1720H | Biomaterials and Protein Chemistry Lab |
| BTC 1800H | Biotechnology in Medicine |
| BTC 1810H | Biotechnology and Drug Manufacturing |
| BTC 1820H | Biotechnology in Agriculture and Natural Products |
| BTC 1900Y[0] | Work Term I (Internship) |
| BTC 1910Y[0] | Work Term II (Internship) |
| BTC 2000H[+] | Effective Management Practices |
| BTC 2010H | Fundamentals of Managerial Concepts |
| BTC 2020H | Society, Organizations, and Technology |
| BTC 2030H | Management of Technological Innovation |

[0] *Course that may continue over a program. The course is graded when completed.*

[+] *Extended course. For academic reasons, coursework is extended into session following academic session in which course is offered.*

#### 7.1.2.6 Elective Courses

| | |
|---|---|
| BTC 1830H | Medical and Scientific Challenges in Marketing Therapeutics |
| BTC 1840H | Patent Law for the Life Sciences |
| BTC 1850H | Creating Life Science Products |
| BTC 1860H | Generations of Advanced Medicine: Biologics in Therapy (GAMBiT) |
| BTC 1920Y | Work Term III |
| BTC 2100Y | Topics in Biotechnology |
| BTC 2110H | Topics in Biotechnology |
| BTC 2120H | Topics in Biotechnology |

Other graduate courses approved by Program Directors.

## 7.1.3 Field: Digital Health Technologies

### 7.1.3.1 Minimum Admission Requirements

- Applicants are admitted under the General Regulations of the School of Graduate Studies. Applicants must also satisfy the Institute for Management & Innovation's additional admission requirements stated below.
- An appropriate bachelor's degree from a recognized university in any area of biology, chemistry, computer science, engineering, epidemiology, psychology, public health, sociology, statistics or related field with a minimum mid-B standing in the final two years of study.
- A minimum 1.0 credit of university-level statistics (or equivalent) with at least a mid-B standing.
- Applicants who have completed their studies outside of Canada must also submit their Graduate Record Examination (GRE) Subject Test scores and meet the SGS minimum standards for English proficiency.
- The MBiotech program also evaluates applicants on their letter of intent, CV, three references and both a science and business interview.

### 7.1.3.2 Program Requirements

- Students must complete **9.~~0~~5 graduate full-course equivalents (FCEs)** over a 24-month period:
  - 4.5 FCEs MBiotech courses (includes credits for Seminar and Placement)
  - 4.0 FCEs Digital Health Technologies courses
  - ~~0.5~~1.0 FCE elective course.
- An ongoing **seminar series** led by university, industry, and government specialists links all the participants with the academic, practical, and applied aspects of the program.

### 7.1.3.3 Program Length

6 sessions full-time (typical registration sequence: S/F/W/S/F/W)

### 7.1.3.4 Time Limit

3 years full-time

### 7.1.3.5 Required Courses

A general description of each required course is posted on the Biotechnology website.

| | |
|---|---|
| BTC 1600H | Biopartnering I |
| BTC 1610H | Biopartnering II |
| BTC 1842H | Medical Device Reimbursement |
| BTC 1859H | Data Science in Health I |
| BTC 1877H | Data Science in Health Part II (prerequisite: BTC 1859H) |
| BTC 1882H | Digital Ethnography in Health |
| BTC 1895H | Introduction to IT Consulting and Web Design |
| BTC 1899H | Data Science and Digital Health Technologies |
| BTC 1900Y$^{0}$ | Work Term I (Internship) |
| BTC 1910Y$^{0}$ | Work Term II (Internship) |
| BTC 2000H$^{+}$ | Effective Management Practices |
| BTC 2010H | Fundamentals of Managerial Concepts |

| | |
|---|---|
| BTC 2030H | Management of Technological Innovation |
| MSC 2011H | Special Topics in Biomedical Communications |
| MSC 2019H | Information and Data Visualization in Science and Medicine |

[0] *Course that may continue over a program. The course is graded when completed.*

[+] *Extended course. For academic reasons, coursework is extended into session following academic session in which course is offered.*

### 7.1.3.6 Elective Courses

| | |
|---|---|
| BTC 1830H | Medical and Scientific Challenges in Marketing Therapeutics |
| BTC 1840H | Patent Law for the Life Sciences |
| BTC 1850H | Creating Life Science Products |
| BTC 1860H | Generations of Advanced Medicine: Biologics in Therapy (GAMBiT) |
| BTC 1920Y | Work Term III |
| BTC 2100Y | Topics in Biotechnology |
| BTC 2110H | Topics in Biotechnology |
| BTC 2120H | Topics in Biotechnology |

Other graduate courses approved by Program Directors.

# University of Toronto
# Minor Modification Proposal: New Graduate Courses or Changes to Existing Graduate Courses

This template should be used to: create a new graduate course; reactivate a closed/deactivated course; rename an existing course; renumber an existing course; etc.

If you have questions while you are filling out this document, please contact your Dean's Office.

| | |
|---|---|
| **Graduate Department/Unit/Centre/Institute** For courses offered by collaborative specializations, list supporting unit. | Institute for Management & Innovation (IMI) |
| **Faculty/academic division** | University of Toronto Mississauga (UTM) |
| **Dean's Office contact** | Lori Innes<br>Program & Curriculum Assistant<br>Lori.innes@utoronto.ca<br><br>Yen Du<br>Program & Curriculum Officer<br>Yen.du@utoronto.ca |

## Part 1: ROSI

**Please complete this section. The data will be used to complete the ROSI record.**

| **New Course—fill out all fields** | |
|---|---|
| **Course designator and number** (e.g., HIS 5XXXH) | BTC1889H |
| **FCE weight** (e.g., 0.5, 1.0) | 0.5 |
| **Full course title for transcript** (max 60 characters) | Deep Learning in Health |
| **Abbreviated title** (max 30 characters) | Deep Learning in Health |
| **Available via Student Web Services** (yes or no) | yes |
| **Course type** (regular, modular, continuous or extended) | Regular |
| **Evaluate* function in ROSI used by unit** (yes or no)<br>*university's online course evaluation system | Yes |
| **Online course** (yes or no) | No |
| **Required course** (yes or no) | No |
| **Grading scale** (letter grades or CR/NCR) | Letter |
| **Course prerequisites; if yes, please list** (e.g., HIS 5XXXH) | BTC1859H and BTC1877H or 1.5 credits in statistics (undergraduate or graduate). Also, 1.0 credit of |

| | |
|---|---|
| | undergraduate/ graduate Biology or related discipline). Advanced data science coding in R languge required. |
| **Course credit exclusions; if yes, please list** (e.g., HIS 5XXXH) | |

## Effective Date

**Required Field—Effective date must be September 1, January 1 or May 1 and not retroactive.**

| |
|---|
| September 1, 2021. The first offering of this course is expected to be in the Winter/ Spring term, beginning January 1, 2022. |

# Part 2: Other Changes to Existing Courses

## Description of Change

| |
|---|
| N/A |

# Part 3: New Course Documentation

## Course Description

| |
|---|
| This is an advanced course in machine learning that is focused on the application of neural networks in a health context. The course assumes a strong foundation to create machine learning models in the coding language R. Basic foundations of neural networks are reviewed. Students will learn about the limitations and the appropriate use of neural networks by working on health and biological related data sets. |

## Academic Rationale

| |
|---|
| Students in the Digital Health Technology (DHT) field within the Master of Biotechnology (MBiotech) Program have expressed a desire to have additional elective course options in advanced data science. This course is being proposed to address this growing demand and interest in statistical methods involving deep learning. Deep learning is a form of artificial intelligence used in the analysis of complex data sets. The course will instruct students on how to construct and apply deep learning tools to health and biological data sets.<br><br>Additionally, this course will serve to bolster the elective options for DHT students. This will be a timely addition as a proposal to increase the number of elective requirements in the program is concurrently being proposed by MBiotech. If approved, students in the DHT field will be required to complete 1.0 credit of elective courses, an increase from the 0.5 credit that is currently required. |

This course will also be open to students external to the Master of Biotechnology program provided they meet the pre-requisites.

## Learning Outcomes

By the end of this course, students will be able to:

1. Set up a neural network for a health data set;
2. Apply neural networks to a diverse array of problems in biology and healthcare settings;
3. Critically assess the use of neural networks and their inappropriate application;
4. Review current papers on the evolving applications of neural networks in a healthcare setting; and
5. Apply neural networks creatively to challenging data sets.

## Similarity/Overlap With Other Courses & Consultation

CSC413H1: Neural networks and deep learning
CSC401H1: Natural language computation
CSC2501HF/485H1: Computational linguistics
CSC2516HS/413H1: Neural networks and deep learning.
CSC2541HS: Topics in machine learning: dynamics of neural network training

**Evaluation:** The above courses require advanced training in both computer science and mathematics. The prerequisites for such a course go beyond what our Digital Health Technology students have learned, and as such our students would not be eligible to attend. Lastly, the domain of application is not as focused on biology and health as the course proposed herein.

PSY474H1: Computation in psychology.

**Evaluation:** The above course does not require the application of coding to explore and set-up the subject matter. In contrast, for the course proposed, a strong foundation in coding is essential. The above course surveys topics in this area, while the course we are proposing challenges students through a series of data sets they must develop neural networks to build predictive models.

JEB1444H Neural Engineering.

**Evaluation:** A more general introduction to neural networks that does not require a solid coding background for its implementation or any background in statistics.

JPB1071H Advanced Topics: Computational Neuroscience

**Evaluation:** This course is looking at the biological underpinnings of the biology of neural networks and its relation to neural networks. In contrast, the course proposed herein is focused on using neural networks as applied to health & biological data sets.

## Resource Implications

We have funding in place in which to offer this course. The course is expected to be taught by a sessional hire or a faculty member associated with the DHT field who has expertise in this subject area on overload.

The software used for this course, is "open source" and there is no cost. IMI approval / feedback is expected Jan 22nd.

Classroom space is required to deliver the course. This will be scheduled under the same timetabling process as all other IMI course offerings, using dedicated IMI space that is internally managed.

## Governance Approval

| | |
|---|---|
| **Unit Sign-Off** | IMI Graduate Curriculum Committee<br>January 21, 2021 |
| **Dean's Office Sign-Off** | Heather Miller, Vice-Dean Teaching & Learning<br>January 25, 2021 |
| **Faculty/Division Council** | UTM Academic Affairs Committee (AAC)<br>February 11, 2021 |

# Appendix A: Draft Course Outline

**Deep Learning in Health**

This course requires an advanced knowledge of machine learning and coding in R. Students should also have some background in biology. The course will teach students on how to conduct deep learning in case examples from the health and biological sciences.

1. Review of Machine Learning use in biology & health
2. Review of Neural Networks
3. Introduction to Deep Networks
4. Initializing a Deep Neural Network; emerging healthcare applications
5. Optimization in Deep Learning models
6. Multi-label classification using deep neural networks
7. Convolutional Neural Networks
8. Recurrent Neural Networks
9. Time series and Deep learning
10. Applications of Deep learning in Medical Imaging
11. Deep learning and Natural Language Processing in Health
12. Project Presentations (Deep learning in health data sets)

**Marking Scheme**

1. Individual Homework assignments ……25%
2. Participation .....10%
3. Data set project ……30%
4. Final Exam……35%
5. **TOTAL ..... ……..100%**

# University of Toronto
# Minor Modification Proposal:
# Changes to Existing Graduate Courses

This template should be used to: reactivate a closed/deactivated course; rename an existing course; renumber an existing course; etc.

If you have questions while you are filling out this document, please contact your Dean's Office.

| | |
|---|---|
| **Graduate Department/Unit/Centre/Institute** For courses offered by collaborative specializations, list supporting unit. | Institute for Management & Innovation (IMI) |
| **Faculty/academic division** | University of Toronto Mississauga (UTM) |
| **Dean's Office contact** | Lori Innes<br>Program & Curriculum Assistant<br>Lori.innes@utoronto.ca<br><br>Yen Du<br>Program & Curriculum Officer<br>Yen.du@utoronto.ca |

## Part 1: ROSI

**Please complete this section. The data will be used to complete the ROSI record.**

| **Changes to an Existing Course fill out applicable fields** | |
|---|---|
| **Current course designator and number (required)** (e.g., HIS 5XXXH) | BTC1899H |
| **Deactivated course designator, number and weight** (e.g., HIS 5XXXH) | |
| **Splitting or amalgamating courses** (list course designators, numbers and weights) | |
| **New designator and number** (e.g., HIS 5XXXH) | |
| **New/renamed full course title for transcript** (max 60 characters) | Digital Health Technology |
| **New/renamed abbreviated title** (max 30 characters) | Digital Health Technology |
| **New FCE weight** of an elective course (e.g., 0.5, 1.0) | |
| **Change to grading scale** (from letter grades to CR/NCR or vice versa) | |
| **Change to course type** (from regular to continuous, modular, extended, etc.) | |

## Effective Date

**Required Field—Effective date must be September 1, January 1 or May 1 and not retroactive.**

| |
|---|
| September 1, 2021 |

## Part 2: Other Changes to Existing Courses
## Description of Change

| |
|---|
| In addition to the name change, this course will, as of September 2021, be offered every other week over two consecutive academic terms (i.e. September through April) rather than the current weekly delivery over one term. This means it will take both fall and winter to cover the course content as a result. |

## Academic Rationale

| |
|---|
| The name change (from *Data Science and Digital Health Technology* to *Digital Health Technology*) reflects the content of the course more accurately. Data science, at this point, is not playing a strong enough role in this course to justify its inclusion in the title. There is some discussion of data science in the course but this is very minor. The overhelming theme of the course is a discussion of issues in digital health.<br><br>Currently, students complete this course concurrently with their internship. To help students manage their workload and allow them more time for both their internship project and the coursework involved in Digital Health Technology, it is proposed that this course be offered every other week over two consecutive academic terms (Fall and Winter/ Spring) instead of the current weekly meetings that occur over one term. This does not change the total number of contact hours and does not change the course weight and objectives but the time between class meetings will allow students to better absorb the material and provide for a more in-depth learning experience. |

## Resource Implications

| |
|---|
| Classroom meeting space between September and April is required. No additional resource implications. |

## Governance Approval

| | |
|---|---|
| **Unit Sign-Off** | IMI Graduate Curriculum Committee<br>December 1, 2020 |
| **Dean's Office Sign-Off** | Heather Miller, Vice-Dean Teaching & Learning<br>January 25, 2021 |
| **Faculty/Division Council** | UTM Academic Affairs Committee (AAC)<br>February 11, 2021 |