



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Meeting of Faculty Council

February 27, 2023 | 12:10-2:00 pm
 Hybrid (GB202 & Zoom)

AGENDA

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|--|-------------------------------------|
| 1. Speaker's Welcome | J Nogami |
| 2. Approval of Agenda
For approval as a regular motion | J Nogami |
| 3. Introduction of New Faculty Members
Seyed Mohamad Moosavi (ChemE), C Rottmann (ISTEP), N Weckman (ISTEP) [continued in item 12] | R Farnood
G Evans |
| 4. Adoption of the Minutes of Previous Meeting
For approval as a regular motion | J Nogami |
| 5. Memorial Tributes
PC Hughes (UTIAS), J Mills (MIE), A Semlyen (ECE) | C Damaren
G Jamieson
D Kundur |
| 6. Report of the Dean
For information/discussion | C Yip |
| 7. Certificate in Justice, Equity, Diversity and Inclusion in Engineering
(Report 3732 Revised)
For approval as a regular motion | D Aleman |
| 8. Session Dates, 2023-2024 (Report 3735 Revised)
For approval as a regular motion | E Bentz |
| 9. Curriculum Updates, 2023-2024 (Report 3736)
For approval as a regular motion | E Bentz |
| 10. FASE Best Practices for Assessing Teaching Effectiveness in PTR Decisions
(Report 3733 Revised)*
For approval as a regular motion | E Passeport |
| 11. Information Reports
For receipt for information | |
| a) Engineering Graduate Education Committee Update (Report 3734) | M Hatzopoulou |
| b) Default Selection of Courses Marked Extra
(Report 3738) | D Posen |
| c) Clarification of Policy Regarding Return of Graded Work Prior to Drop
Deadline (Report 3739) | D Posen |

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| 12. Introduction of New Faculty [continued from Item 3]
S Emara (ECE) | D Kundur |
| 13. Other Business | J Nogami |
| a) Revision of Teaching Methods and Resources Committee Manual
(Report 3737)
For information only (no vote) | E Passeport |
| 14. Date of Next Meeting | J Nogami |
| 15. Adjournment | J Nogami |

*To be distributed.

Rev. 2/15/2023 12:21 PM



**Council of the Faculty of Applied Science & Engineering
Minutes of the Meeting of December 6, 2022**

MEMBERS: Jun Nogami (Speaker), Chris Yip (Dean), Ravi Adve, Dionne Aleman, Danita Allick, Cristina Amon, Brohath Amrithraj, Julie Audet, Evan Bentz, Shlomo Bibas, Chris Bouwmeester, Eric Bryce, Jeremy Bryce, Markus Bussmann, Hay Shun Chan, Heba Chehade, Alan Chong, Shai Cohen, Daire Crawford, Michelle Deeton, Stark Draper, Feras Elsaid, Natalie Enright Jerger, Greg Evans, Jennifer Farmer, Seyedreza Fattahi Massoum, Daniel Frances, Diane Giang, Ashvin Goel, Aidan Grenville, Piyush Gupta, Marianne Hatzopoulou, Angela Henshilwood, Glenn Hibbard, Randa Higazy, Ken Hilton, Muktar Homam, David F. James, Parker Johnston, Kyle Juliao, Mustafa Kanchwala, Dawn Kilkenny, Daeho Kim, Deepa Kundur, Jiahao (Terry) Li, Antonio Liscidini, Heather MacLean, Don MacMillan, Saf Mahmood, Paul Milgram, Kasra Modares, Ibrahim Ogunsanya, Joseph Paradi, Elodie Passeport, Milos Popovic, Daniel Posen, Mark Rittinger, Scott Sanner, Agrim Sharma, Naman Sharma, Brent Sleep, David Song, Marisa Sterling, Micah Stickel, Chris Twigge-Molecey, Tony Vanvari, Chirag Variawa, Carmela Versace, Peter Wei, Elizabeth Whitmell, Paul Yoo, Edmond Young, Sherry Zhang, Jenny Zhou

SECRETARIAT: Caroline Ziegler (Secretary), Alex Schroen (Moderator)

GUESTS: Irina Belaya, Inga Breede, Helen Bright, Chris Brown, Sharon Brown, Jessica Chow, Shai Cohen, Carolyn Farrell, Pierina Filippone, Jenn Galley, Shilpa Gantotti, Rodney Gensell, Leslie Grife, Sania Hameed, Sa'diyya Hendrickson, Andrea Luna Yong, Jess MacInnis, Estelle Oliva-Fisher, Sadiyya Parnell-Hendrickson, Anna Limanni, Fabian Parsch, Dan Pettigrew, Nelly Pietropaolo, Zeeshan Rayees, Cindy Rottmann, Ingrid Schvarczkopf, Frank Scornaienchi, Alex Tichine, Sean Uppal, Allison Van Beek, Aaron Wang, Geoff Wichert, Nefeteria Wickham

1. Speaker's Welcome

Speaker Jun Nogami called the second Faculty Council meeting of 2022-2023 to order at 3:10 pm. He welcomed members and guests and reviewed protocols for the hybrid meeting.

Before acknowledging the land on which the University of Toronto operates, the Speaker mentioned recent news of the discovery of the bodies of three or four Indigenous women near Winnipeg, adding that it is estimated that over 4,000 Indigenous women and girls have gone missing or have been murdered in Canada over the last 30 years.

2. Approval of Agenda

The agenda and reports were distributed on November 22. Agenda item 04(b), the memorial tribute to Professor Emeritus Frederic Anthony DeLory, was distributed on November 29.

On a regular motion duly moved, seconded and carried, the agenda was approved.

3. Adoption of the Minutes of Previous Meetings

No errors or omissions were noted in the minutes of the October 13, 2022 Council meeting and on a regular motion duly moved, seconded and carried, the minutes were approved.

4. Memorial Tributes

(a) Frederic Anthony DeLory

Brent Sleep, Chair of the Department of Civil & Mineral Engineering, read the following memorial tribute in honour of Professor Emeritus Frederic Anthony DeLory.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with sincere regret the death on Wednesday, September 28, 2022 of Professor Emeritus Frederic Anthony DeLory.

Professor DeLory was a Second World War Canadian Army Volunteer (1943-1945), rising from Private to Lieutenant. He graduated from McGill University with a Bachelor of Engineering (Civil) in 1948, after which he worked for the Consolidated Mining and Smelting Company, Ltd. in Trail, B.C. as a Junior Engineer (1948-1950). Professor DeLory then graduated from the University of Toronto with a Master of Applied Science in 1951 following which he worked for the Aluminum Company of Canada, Ltd. in Arvida, Quebec and Kitimat, B.C. as a soils engineer (1951-1953).

Fred was awarded an Athlone Fellowship which he held at the Imperial College of Science and Technology, London, England, graduating with a D.I.C. in 1953 and a Doctor of Philosophy from the University of London in 1957. On returning to Canada, he was employed by H.G. Acres and Company in Niagara Falls, Ont., as a design engineer (1957-1958).

Professor DeLory joined the faculty of the University of Toronto as Assistant Professor in 1958, was promoted to Associate Professor in 1962, and later to full Professor. Since 1990, he has been Professor Emeritus. He supervised numerous undergraduate, masters and doctoral students over this time and taught courses in engineering geology, soil properties and behaviour, foundations and earthworks, soil mechanics and associated laboratories. Fred was a member of the Canadian Geotechnical Society, Engineering Institute of Canada, American Society of Civil Engineers, and the International Society for Soil Mechanics and Foundation Engineering. He served as both Associate Editor and Editor of the Canadian Geotechnical Journal. From 1973 to 1988, Fred chaired the Division of Geological Engineering.

Professor DeLory was simply a kind and virtuous man who was often sought for his wise counsel by students and faculty colleagues alike. He had an infectious enthusiasm for engineering artifacts, particularly those related to steam. He kept an operable steam engine in his office

about which he would offer tutorials to those with interest. In the early 1970s, Fred restored a 60-year-old Connecticut steamboat which he could be found sailing in Toronto Harbour and the Trent Canal system. After retiring, among several other projects, he was a volunteer driver for Meals on Wheels for 17 years. He moved to Halifax in 2008.

Fred maintained a strong connection with his birthplace in Prince Edward Island and frequently entertained colleagues and friends with stories of growing up in that colourful location.

After a lengthy illness, Professor DeLory passed peacefully in Camp Hill Veterans' Memorial Building, QEII, Halifax, at age 97. Fred was born in Georgetown, PEI on June 7, 1925, the son of the late Frederick and Mary (Cullen) DeLory. He is survived by his devoted wife of 62 years, June (Garrett) DeLory; daughters, Kathryn (James) Steele and Deni DeLory (Dan Macadam); siblings, Cullen (Barbara) DeLory and Bernice (William) Melanson; niece, Nicole DeLory; as well as numerous other nieces and nephews. He is predeceased by brothers, John, Dr. Maurice (Mike), Richard, Stephen and sister, Sheila.

It is difficult to express adequately the admiration his students and colleagues had towards Professor DeLory for his willingness to serve, his wisdom, and his friendship.

Be it further resolved –

THAT this tribute to Professor Emeritus Frederic Anthony DeLory be inscribed in the minutes of this Council meeting, and copies be sent to his family as an expression of the respect and gratitude of the members of Council.

(b) Charles Albert Ward

Professor Emeritus David F. James of the Department of Mechanical & Industrial Engineering read the following memorial tribute in honour of Professor Emeritus Charles Albert Ward.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on October 12, 2022 of Professor Emeritus Charles Albert Ward.

Charles Albert Ward, born May 28, 1939, passed away on October 12, 2022, in Hennick Bridgepoint Hospital, Toronto. He leaves behind family members in Texas: brother, John and his wife, Cissy; nieces, Susan and Delinda; and nephews, David (Clara) and Johnny (Nell).

Charles was born in Bailey, Texas and after graduating from Magnolia High School he studied Mechanical Engineering at the University of Texas. He later earned his PhD from Northwestern University in 1967 at which time he embarked on his academic career. He first joined the Department of Mechanical Engineering at the University of Toronto on July 1, 1967. He became a full professor in the department in 1977. While on paper Charles retired in 2004, he remained active in the Department teaching graduate-level courses, including MIE1101 Advanced Classical

Thermodynamics and MIE1107 Statistical Thermodynamics, and continued with his research for a number of years.

Charles was a renowned researcher in his field and the Director of the Thermodynamics and Kinetics Laboratory. The Statistical Rate Theory – a theory for predicting the rate of molecular transport across phase boundaries – developed in his lab has been cited in the open literature over 400 times. During his career he and his students published over one hundred papers in peer-reviewed journals. His studies of interfacial kinetics led to the measurement of a temperature discontinuity at the liquid-vapour interface during evaporation and to the measurement of a new property of water: the surface thermal capacity. This property defines the energy transport by surface-tension-driven flow.

Charles was recognized with many prestigious awards throughout his career including two Alexander von Humboldt Fellowships, the Canadian Society of Mechanical Engineering Robert W. Angus Medal and the Canadian Society for Mechanical Engineering Jules Stachiewicz Medal.

Outside of his academic career, Charles was a loving husband to his wife Barbara with whom he built a happy life in Toronto. They were known for hosting dinner parties, which showcased Barbara's excellent cooking skills and Charles' expert wine pairings. They enjoyed attending opera performances and visiting the Art Gallery of Ontario.

Greatly admired by students and colleagues alike, the Department remembers Charles as kind, thoughtful and well-spoken, and he will be dearly missed by all who knew him.

Be it further resolved –

THAT this tribute to Charles Albert Ward be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

The Speaker assumed concurrence with these resolutions and Council observed one minute of silence in honour of Professors Emeriti DeLory and Ward.

5. Report of the Dean

Dean Chris Yip welcomed all to the Council meeting and made the following remarks.

(a) National Day of Remembrance and Action on Violence Against Women

Today on the National Day of Remembrance and Action on Violence Against Women, the University of Toronto joined communities across Canada in remembering the 14 women killed in a devastating act of misogyny at the engineering school at the École Polytechnique de Montréal in 1989. The University's memorial was held at Hart House from 12:00 to 2:30 pm, and at 5:00 pm today, a group of female Engineering students will unveil a monument outside the Galbraith Building featuring 14 transparent, life-sized silhouettes – each inscribed with the name of a victim – gathered around a fleur-de-lis. All are invited to attend the unveiling.

(b) Staying Healthy

We are in cold, flu and Covid season at a time when our health-care systems are overwhelmed. We all have a part to play in protecting ourselves and others against these respiratory illnesses by masking up, staying home when ill, and remaining current on seasonal vaccines. Thank you to our Faculty Operations Team for organizing a successful Covid pop-clinic in the Bahen Centre on December 1. Students, faculty and staff can also be vaccinated at the Discovery Pharmacy in the Leslie Dan Faculty of Pharmacy.

(c) Canada Research Chairs

Congratulations to our Canada Research Chairs: Aimy Bazylak of Mechanical & Industrial Engineering, in Thermofluids for Clean Energy (Tier II, new); Marianne Hatzopoulou of the Department of Civil & Mineral Engineering, in Transport Decarbonization and Air Quality (Tier 1, new); and Arun Ramchandran of the Department of Chemical Engineering & Applied Chemistry, in Engineered Soft Materials and Interfaces (Tier 2, renewal). This is a tremendous achievement for our Faculty.

(d) Engineering Alumni Network Awards

The U of T Engineering Alumni Network Awards recognize outstanding members of our community. Nominations opened November 4 and will close on February 3. Recipients will be selected in Spring 2023 and formally celebrated at the Fall 2023 Engineering Alumni Network Awards Ceremony. It is amazing to see what our alums are doing, whether early, mid or late career.

(e) Administrative Staff Awards Program

We are now accepting nominations for our Faculty's 2023 Administrative Staff Awards. Nomination packages should be submitted to the Director, Awards and Honours by February 3.

(f) Travel Update

International travel has resumed. The Dean has recently returned from a trip to South Africa which he made with the engineering deans from York University and the University of British Columbia. It was fantastic to see engineering in South Africa with its amazing buildings and civil infrastructure and great to build international partnerships. Dean Yip and the U of T President are leaving tomorrow for Vietnam where they will work to strengthen connections in research and recruitment.

(g) Accreditation Update

The Dean and Vice-Dean, Undergraduate attended a *Futures of Engineering Accreditation (FEA)* foresight session in November, the first system-wide engagement hosted by Engineers Canada in three years to investigate and validate the purpose and scope of accreditation. Engineers Canada and Professional Engineers Ontario support substantial changes to the accreditation

process, including a “temporary easement variance” of accreditation requirements regarding international student exchanges.

(h) Celebration of Graduates

On December 13 we will celebrate our 2020-2021 graduates in Convocation Hall. Faculties across the university have been celebrating this past week, and we are the largest group with 1,300 graduates expected to attend. There are still seats available on stage for the 10:00 am ceremony (AER, BME and ECE), the 2:00 pm ceremony (CHE, CIVMIN and EngSci) and the 6:00 pm ceremony (MIE and MSE), and all are invited to attend.

The Dean wished Council all the best for the holiday season and good luck to students writing exams.

The following items were endorsed by the Executive Committee of Faculty Council at its November 15 meeting and are for Council’s approval.

6. Certificate in Public Policy and Engineering

Dionne Aleman, Associate Dean, Cross-Disciplinary Programs, presented Report 3728 Revised, a proposal to create a Certificate in Public Policy and Engineering that will provide students in the Core-8 engineering programs and Engineering Science with training in the extensive intersections between the two disciplines, and aims to inspire engineering students to pursue careers or graduate studies in policy-making.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT a Certificate in Public Policy and Engineering, as described in Report 3728 Revised, be approved effective September 2023.

The Dean thanked Professor Aleman for moving this proposal through consultations and governance so quickly and noted that the Munk School of Global Affairs & Public Policy, who will offer the three half-courses, has been very keen to participate. The Dean has also received enthusiastic feedback from several alumni who are interested in our progress in this sector.

The motion was carried.

7. Major Curriculum Changes for the 2023-2024 Academic Year

Evan Bentz, Chair of the Undergraduate Curriculum Committee, presented Report 3725 Revised, which lists proposed curriculum changes for the next academic year. Of particular note are the first of many changes to the industrial engineering program as a result of a multi-year curriculum renewal project.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the proposed curriculum changes for the 2023-2024 academic year, as described in Report 3725 Revised, be approved.

During discussions, Professor Bentz confirmed that the use of “CGPA” instead of a percentage with regards to changes to MIE498H/Y1: Research Thesis is intentional.

A Council member commented that there are not enough elective spots for HSS/CS courses in the curriculum for students who are taking minors and certificates, and suggested that it would be ideal to have at least one more elective spot for non-technical courses. Professor Bentz noted that students can take courses as Extra if they like, even during PEY, but the Faculty will not change its programs to require it. The chair of the Undergraduate Scholarships & Awards Committee added that taking Extra courses may impact students’ standings on the Dean’s Honour List as well as scholarships.

Professor Bentz urged faculty to review their calendar entries to ensure they are correct and up to date.

The motion was carried.

8. Change to Faculty Calendar regarding Transfer Credits

Evan Bentz, Chair of the Undergraduate Curriculum Committee, presented Report 3727 Revised. The proposed amendment to the FASE calendar regarding post-admission transfer credit is intended to tighten up the ability of students to take summer HS/CSS or business minor credits at international institutions (with the exception of official U of T exchange partners), without receiving prior permission from the Registrar’s Office on a case-by-case basis. Many of these international courses are only loosely affiliated with the university, are aggressively marketed and are difficult to evaluate for quality.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the FASE calendar be amended regarding transfer credits, as described in Report 3727 Revised, effective immediately.

There were no discussions and the motion was carried.

9. Reports for Information

The following reports were approved by the Executive Committee of Council at its November 15 meeting and are for Council’s information.

(a) Engineering Graduate Education Committee Update

Marianne Hatzopoulou, Chair of the Engineering Graduate Education Committee, presented Report 3726, which lists new courses approved in BME, MIE and ROB.

There were no discussions and the report was received for information.

(b) Admissions Cycle 2022

Ashvin Goel, Vice-Chair of the Undergraduate Admissions Committee, presented Report 3730, a breakdown of applications for admissions, offers of admission, registration figures and characteristics of the first-year class.

There has been a two percent increase in applicants but a drop in international applicants, likely because fewer international students attended high school in Ontario due to Covid. This trend may carry into the 2023 admissions cycle.

We have seen a high entering average, which is possibly due to Covid-related grade inflation. This is likely to drop, but will be monitored by the Undergraduate Admissions Committee. Professor Goel remarked that grade inflation is an administrative problem because it causes grade cut offs to increase.

Professor Goel confirmed that the Faculty has data on how Ontario Secondary School (OSS) applications have changed over many years and can share it across departments. He also stated that the Faculty has data that can correlate student averages between entry and first-year, and is considering how to use this information.

The report was received for information.

10. Other Business: Service Presentation

Dean Yip acknowledged and thanked Faculty Registrar Don MacMillan, who is retiring at the end of December, and presented him with a token of the Faculty's appreciation. He invited Council members to Mr. MacMillan's retirement party on December 14 from 3:00-5:00 pm in the Myhal Centre's 5th floor Atrium. There was sustained applause at the conclusion of the presentation.

There was no other business.

11. Discussion Item: Learning to Teach, Teaching to Learn – Modern First-Year Math Education in Engineering

The Speaker welcomed Shai Cohen, Assistant Professor, Teaching Stream in ISTEP; Fabian Parsch and Sean Uppal, Assistant Professors, Teaching Stream in the Department of Mathematics; and Sa'diyya Hendrickson, Sessional Lecturer in Engineering and Arts & Science. Unable to be present was Camelia Karimian Pour, Assistant Professor, Teaching Stream in the Department of Mathematics.

The team described changes in first-year math courses over the past decade; showcased recent

changes and the direction in which they lead; and began discussions on what has worked and where improvements can be made. Detailed slides were projected at the meeting and are appended to these minutes.

Council members discussed the goal of students having both a computational and conceptual understanding of math, and the need to focus more on the conceptual side at this time.

Teaching faculty can successfully adopt some of the practices mentioned by introducing them gradually and iteratively and frequently seeking student feedback, especially with regard to engagement and workload. It would be helpful for upper year students who have benefitted from these changes to share their experiences with first year students, and for faculty to be attuned to changes in students' stress levels and mental health.

It was mentioned that many first-year math instructors are sessional and transient and can provide varied quality of teaching. We should use more teaching-stream professors and coordinate instruction for consistency of content across sections. It would also be beneficial for math instructors in upper year courses to provide their values, skills and insight into the first-year courses.

We should gauge how changes to first year math affect students' understanding of the subject as they progress through their programs. Professor Cohen stated his interest in supplementing the anecdotal feedback received with a formal study, but this has been delayed by Covid and other factors.

Professor Parsch has a table, based on surveys, that describes the time and workload required for students to complete each module of the active learning cycle displayed in the slides (PCEs, class, tutorials, self-study and homework). He encouraged instructors to discuss and coordinate their expectations of students, which can differ between courses.

Members indicated that they would like to continue this discussion with regard to the first-year curriculum.

The Speaker thanked Professors Cohen, Parsch, Uppal and Hendrickson for their presentation.

12. Date of Next Meeting

The next Faculty Council meeting is on February 27, 2023.

13. Adjournment

The meeting was adjourned at 4:58 pm.

/cz



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Memorial Tribute to

PETER CARLISLE HUGHES

Professor Emeritus
University of Toronto Institute for Aerospace Studies

February 27, 2023

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on January 5, 2023 of Peter Carlisle Hughes.

Professor Emeritus Peter Carlisle Hughes was a preeminent dynamicist, aerospace engineer and space robotics pioneer.

Peter was a graduate of Engineering Physics (now Engineering Science), class of 6T2. He went on to earn a Master's and doctoral degree from UTIAS and joined the faculty immediately thereafter in 1966. He retired from the University in 2004.

For over forty years, Peter played a central role in Canada becoming a space-faring nation. The history of Canada in space cannot be written without Peter Hughes's name. Indeed, Canada's sterling international reputation in space technology owes much to him.

He began his career by recognizing the cause of the unexpected tumbling behaviour of Alouette I, Canada's first satellite. In 1970, along with colleagues at UTIAS, he helped secure the safe return of Apollo XIII.

His work was seminal to the design of perhaps Canada's most recognizable technological achievement, Canadarm—the robotic arm for the Space Shuttle. On the occasion of bestowing on Peter in 2007 the Canadian Space Agency's (CSA) John H. Chapman Award of Excellence, given as "... tribute to a renowned person whose vision for the development of space reflects Canada's values as much as its present and future needs," the CSA President stated that, among other things, "... Canada could not have built Canadarm for the NASA Space Shuttle were it not for Dr Hughes's complete analysis of Canadarm's dynamics and control."

He was also honored with the CASI Alouette Award presented annually to a Canadian "... for outstanding achievement in the field of astronautics." The citation included the comments that "Professor Hughes has made contributions to Canadian space technology and to international

space science, while nurturing his love of the subject in students for over four decades. Peter Hughes literally wrote the book on the dynamics of spacecraft ...”

The book referred to, one of six he authored (or coauthored), is his text/reference book, *Spacecraft Attitude Dynamics*, originally published in 1986 and republished in 2004 by Dover as a “classic in its field.” It has been in continuous use in graduate course classrooms world-wide and on the bookshelves of most professionals in the field. In a 2006 interview Scott Ploen, the then-new IEEE Control Systems Magazine Associate Editor for Book Reviews, was asked which books were some of his personal favorites; Ploen replied, “I think everyone has his or her own personal list of desert island classics. *Spacecraft Attitude Dynamics* by Hughes is one of my favorites.”

In 1980, Peter founded Dynacon Inc., filling a crucial niche in Canada’s industrial landscape. Dynacon became one of the first space-related companies to spin off space technology to wider terrestrial application using robotics developed for space to help automate the medical laboratory business.

This experience motivated Peter to obtain an MBA from York University’s Schulich School of Business. He then founded, with a bequest from Jeffery Skoll, a joint program—the Skoll program—in the Faculty of Applied Science and Engineering and the Rotman School of Management at the University of Toronto to facilitate students earning an MBA while completing their degree in engineering.

He shall be dearly missed.

Be it further resolved –

THAT this tribute to Peter Carlisle Hughes be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

*Prepared by Professor Gabriele D’Eleuterio, UTIAS
and read by Professor Chris Damaren, Director, UTIAS*



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Memorial Tribute to

James K. Mills

Professor

Department of Mechanical & Industrial Engineering

February 27, 2023

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on November 18, 2022 of Professor James K. Mills.

Jim Mills was an accomplished and respected mechanical engineering professor who passed away on Friday, November 18, 2022.

Jim was a longstanding member of the University of Toronto community having received both his MSc degree in Electrical Engineering and then a PhD in Mechanical Engineering from the University in 1982 and 1987 respectively. He first joined the Department of Mechanical Engineering at the University of Toronto as a professor in 1988. Prior to joining MIE, Jim worked in designing inertial navigation components. In the Department, he took personal responsibility to lead the development of rigorous safety policies that we still use today. He helped in the hiring and mentoring of many colleagues over the years and was passionate in contributing to strengthening the Department. He also helped spearhead the undergraduate mechatronics stream in the Department, which is now the most popular stream among our students.

He is remembered fondly by his colleagues, both within MIE and outside of the Department. Jim and his longtime collaborator and friend, Professor Wai Tung Ng (ECE), pursued multi-disciplinary projects and secured multiple NSERC Strategic, Alliance, and OCE grants together. Jim's experience and knowledge of control systems, image processing, thermodynamics and automated manufacturing were crucial for projects that ranged from the formation flying of unmanned drones to power semiconductor modules for electric vehicles.

Outside of his research, Jim had many hobbies, including astronomy, photography and adventure travel. Jim was always happy to chat with colleagues or to grab coffee during a break. He would talk about his summer work in Hong Kong and the trips he took while there. Jim would graciously host you when you visited him abroad. His insight was often helpful in making both career and personal decisions.

During their regular early morning coffee sessions at the Second Cup on College Street, Jim and Professor Ng would talk about U of T, their departments, and their respective travels. The photos Jim took on his trips to Vietnam, Tibet (and the non-pressurized “pressurized” train), and across the Silk Road by bus (and the heat on that trip) showed him to be a man who wanted to understand the world. He had been to Antarctica onboard a small scientific research vessel. He had taken safaris, travelled to the Seychelles Island to photograph wildlife and transited the Panama Canal. Before the pandemic struck, he managed to travel to Namibia, a lifelong goal. Everyone who talked with him heard and saw photos from this trip and he convinced many that Namibia should be their first post-pandemic destination.

Jim was the director of the Nonlinear Systems Control Laboratory and his research focused on the areas of robotics, automation, and control. He published over 400 journal and conference papers and supervised over 50 MSc and PhD students as well as many Postdoctoral fellows and research engineers. He cared greatly about these students – and it was clear it was reciprocated. On any defense, a student knew that Jim was backing them to the end. He would also continue mentoring many of his former students well into their post-graduate careers.

Jim served as Co-Editor in Chief of the International Journal of Information Acquisition and was a member of the Editorial Board of the International Journal of Mechatronics and Automation. He served on the program committees of numerous international conferences. He was an Invited Visiting Professor at the Centre for Artificial Intelligence and Robotics in Bangalore, India, the University of Science and Technology in Hong Kong, the Chinese University of Hong Kong, as well as City University, Hong Kong.

Be it further resolved –

THAT this tribute to James K. Mills be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

*Prepared by Lynsey Mellon, Professor Pierre Sullivan and Professor Goldie Nejat
(Department of Mechanical & Industrial Engineering), with input from
Professor Wai Tung Ng (Department of Electrical & Computer Engineering).*

*Presented at Faculty Council by Professor Greg Jamieson, Interim Chair
of the Department of Mechanical & Industrial Engineering.*



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Memorial Tribute to

ADAM SEMLYEN

Professor Emeritus

The Edward S. Rogers Sr. Department of Electrical & Computer Engineering

February 27, 2023

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on May 24, 2022 of Professor Adam Semlyen.

Professor Adam Semlyen was born to Aurel and Anna (née Gyorgy) Semlyen in Gheria, a village in northern Romania, on January 10, 1923.

Adam achieved his Diplom-Ingenieur (the traditional engineer's degree) from the Polytechnique Institute of Timisoara in Romania. In 1949, he graduated with his PhD degree from Polytechnique Institute Iași — now the Gheorghe Asachi Technical University of Iași — an institution that has a storied tradition in Romanian engineering education. Directly after his doctorate, he held academic positions at the same institution while working for an electric power utility, the Engineer Regional Power Authority in Timisoara. After two years, Adam left the utility and became a full-time faculty member of Polytechnic Institute Timisoara, teaching and working there for close to twenty years. Adam was married to Mary Semlyen.

In 1969, Adam moved to Canada with and joined The Edward S. Rogers Sr. Department of Electrical & Computer Engineering (known at the time as the Electrical Engineering Department). As a member of what was then the Power Group, his main research interests were in steady-state and dynamic analysis as well as computation of electromagnetic transients in power systems. In 1988, he was named a Fellow of the IEEE for his contributions to this area. That same year he became a Professor Emeritus. He continued to advance the profession, publishing one of his most-cited papers during this time of his life and working with measurable effect well into his nineties. Remarkably, at the age of 98 he was first author on a paper, which proposed a mode identification of linear systems using a novel approach based on the theory of hyperplanes. One wonders what the age record is for lead author for an IEEE publication.

Adam was considered the “academic’s academic.” His curiosity moved him to suggest the possibility of intergroup research collaboration in an era when that was still uncommon. Gentle yet fiercely scholarly, he was known as an exceptional colleague who set high standards for education in the department with his dedication. His integrity and sense of justice never wavered, whether fighting for a colleague’s recognition or proudly representing his dearly loved profession.

Behind his quiet, introspective demeanor, Adam had a passion for education and was known for his care for students. As a thesis supervisor, he would not confine his teachings to the thesis at hand but would also extend it to engineering principles in general, ensuring his students understood and mastered the essence of being an engineer. These lessons would resonate throughout their professional careers.

Adam had an enviably long and productive life, the consummate engineer and teacher whose impact lives on in his contributions to the profession and to the community through those who were fortunate to study under him as students, learn from him as colleagues, or spend time with him as a friend. He will be missed.

Be it further resolved –

THAT this tribute to Adam Semlyen be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

*Prepared and presented at Faculty Council by Professor Deepa Kundur,
Chair of The Edward S. Rogers Sr. Department of Electrical & Computer Engineering.*



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3732 Revised

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
Faculty Council (February 27, 2023)

From: Professor Dionne Aleman
Associate Dean, Cross-Disciplinary Programs

Date: February 3, 2023; revised February 13, 2023

Re: **Proposed Certificate in Justice, Equity, Diversity and Inclusion in Engineering**

REPORT CLASSIFICATION

This is a major policy matter that will be considered by the Executive Committee for endorsement and forwarding to Faculty Council for vote as a regular motion (requiring a simple majority of members present and voting to carry).

BACKGROUND

Over the last few years, core and elective courses within the engineering curricula have been built and developed to keep pace with the broadening and evolving knowledge on the value of social and humanistic considerations within engineering, and the standards of what produces innovative, equitable and better-functioning technology and organizations.

The concept of more curricular acknowledgement and integration of justice, equity, diversity and inclusion within FASE has been raised by the Engineering Society and the Engineering Equity, Diversity and Inclusion Action Group (EEDIAG).

PROPOSED

A Certificate in Justice, Equity, Diversity and Inclusion (JEDI) in Engineering is being proposed to scaffold these transdisciplinary courses and provide undergraduate students in the Core-8 engineering programs and Engineering Science with a deeper knowledge of the social impact and responsibility of engineering decisions and actions.

CONSULTATIONS

The proposal for the JEDI certificate was developed with significant contributions and support from the former FASE Associate Director, Access & Inclusive Pedagogy. Additional development was guided by the Associate Dean, Cross-Disciplinary Programs; Assistant Dean, Diversity,

Inclusion and Professionalism; Assistant Director, Cross-Disciplinary Programs Office; Director, ILEAD; and Director, ISTEP.

Consultations were held with key stakeholders, such as the President and Equity and Inclusion Director of the Engineering Society; Engineering Equity, Diversity and Inclusion Action Group (EEDIAG); Engineers without Borders (EWB); National Society of Black Engineers (NSBE) Executive Leadership; and the Faculty's Inclusion, Diversity, Equity Advisory (IDEA) Committee.

The Critical Studies in Equity and Solidarity Program at New College; the Institute for the History & Philosophy of Science & Technology; and the Women and Gender Studies Institute were also consulted regarding the inclusion of their courses, as was the FAS Dean's Office.

RECOMMENDATION FOR COUNCIL

THAT a Certificate in Justice, Equity, Diversity and Inclusion in Engineering, as described in Report 3732 Revised, be approved effective September 2023.

University of Toronto Proposal to Create a Certificate in Conjunction With an Undergraduate Program

For-credit undergraduate certificates (category 2) are offered in conjunction with an existing undergraduate degree program. They are governed by the [Policy for Certificates \(For-Credit and Not-For-Credit\)](#) and follow the protocols for approval and closure for [minor modifications](#) under the [University of Toronto Quality Assurance Process \(UTQAP\)](#).

Proposed certificate name:	Certificate in Justice, Equity, Diversity and Inclusion in Engineering
Undergraduate degree(s) the certificate will be offered in conjunction with:	Any Engineering Bachelor's Degree (BASc or BASc in Engineering Science)
Faculty/academic division:	Faculty of Applied Science & Engineering (FASE)
Academic unit:	Cross-Disciplinary Programs Office, FASE
Dean's Office contacts:	Dionne Aleman, Associate Dean, Cross-Disciplinary Programs Marisa Sterling, Assistant Dean, Diversity, Inclusion and Professionalism Caroline Ziegler, Faculty Governance and Programs Officer
Version date:	February 13, 2023

1 Summary

Engineering is socio-technical in nature – a problem-solving approach which both exerts and is influenced by social forces. Over the last few years, core and elective courses within the engineering curricula have been built and developed to keep pace with the broadening and evolving knowledge on the value of social and humanistic considerations within engineering and the standards of what produces innovative, equitable and better-functioning technology and organizations. A certificate in justice, equity, diversity and inclusion (JEDI) in engineering is being proposed to scaffold these

transdisciplinary courses and provide undergraduate students in the Core-8 engineering programs and Engineering Science with a deeper knowledge of the social impact and responsibility of engineering decisions and actions. This certificate further incorporates EDI elements into the engineering curriculum, and follows current direction from the Vice Provost Innovations in Undergraduate Education to embed EDI principles in pedagogy, curriculum and program design.

This certificate was developed with significant contributions and support from Mikhail Burke, Associate Director, Access & Inclusive Pedagogy in FASE during the development of this proposal.

2 Effective Date

September 1, 2023

3 Academic Rationale

U of T Engineering's mission includes the ambition to lead in transformative teaching and learning through creativity, multidisciplinary collaboration, and innovation, and as a result, to develop the next generation of makers, innovators and global engineering leaders.

Within both social and academic arenas, there is a continued evolution of the engineering ethos. A growing body of research correlates diversity with excellence in innovation, and sustainability with acting socially responsibility. Hence, discourse on the social considerations within engineering has expanded beyond adherence to ethical codes to include values such justice, equity, diversity and inclusion (JEDI).

This recognition has led to the broadening of ideals that influence who engages in engineering and how the engineering skill-set is leveraged. Considerations for diverse representation, inclusive teams and stakeholder engagement, equitable and just access and design, are being held in higher regard within the spaces where engineers work, research and/or practice. The JEDI values are being quickly recognized within post-secondary institutions, industry and the corporate world, research spaces and the profession's regulatory bodies, with more institutions and businesses explicitly integrating JEDI considerations into their vision and practice. Therefore, there is a growing necessity and demand to have engineers, managers, researchers, and

instructors who are versed in JEDI principles and leverage that knowledge to positively influence the development and impact of their work.

There is an increasing number of existing engineering courses that have a heavy focus on social and/or ethical considerations within engineering and how technology influences and is influenced by society (and its constituents). There are also several courses within relevant departments within the Faculty of Arts & Science that would provide students opportunities to learn foundational knowledge within equity-centric schemas and contextualize technology and society from a humanities perspective. Therefore, this certificate provides a scaffolded opportunity for students to engage learning about JEDI principles and social implications to be applied in engineering contexts.

4 Need and Demand

Considering the truly transdisciplinary nature of JEDI considerations, this certificate will be open to undergraduate students in any engineering discipline.

Completion of the certificate will depend on the availability of, and student interest in, the engineering courses, TEP-coded electives and FAS electives connected to the certificate.

Enrolment spaces in the FAS elective courses will be secured in agreement with the departments and programs and the FAS/FASE Interdivisional Teaching Agreement. The Institute for the History & Philosophy of Science & Technology, the Women and Gender Studies Institute, and the Critical Studies in Equity and Solidarity Program at New College have been consulted and are supportive of the inclusion of these courses and the creation of dedicated enrolment spaces.

5 Admission Requirements

There are no admission requirements for engineering certificate programs. Successful completion of the certificate is recorded on the student's academic transcript as part of their undergraduate program. The certificate is open to all undergraduate students in any engineering discipline.

6 Program Requirements

The certificate consists of three half-course requirements, totaling 1.5 FCE. The courses can be completed as part of the degree requirements (core or CS/HSS electives) in a student's program or taken as extra credits (not counting towards their degree requirements).

Eligible courses for the certificate fall into three broad categories: equity and justice; technology and society; and ethics and broader considerations. Students are required to take one course from each category and no more than two of the three courses can have a non-FASE affiliated course code.

Equity and justice

- TEP324H1: Engineering and Social Justice (FASE)
- WGS273H1: Gender and Environmental (In)Justice (FAS)
- WGS390H1: Land-ing: Indigenous and Black Futurist Spaces (FAS)
- CSE240H1: Introduction to Critical Equity and Solidarity Studies (FAS/New College)

Technology and society

- CME259H1: Technology in Society and the Biosphere I (FASE)
- ESC203H1: Engineering and Society (FASE)
- HPS202H1: Technology in the Modern World (FAS)
- HPS205H1: Science, Technology, and Empire (FAS)

Ethics and broader considerations

- TEP447H1: The Art of Ethical & Equitable Decision Making in Engineering (FASE)
- HPS200H1: Science and Values (FAS)
- TEP449H1: Intercultural Communication and Leadership (FASE)
- TEP445H1: The Power of Story: Discovering Your Leadership Narrative (FASE)

The Faculty of Arts & Science courses listed above represent courses where we have agreement to offer reserved spaces for Engineering students. Within FAS there are many other courses that connect to these concepts. If a student is enrolled in a course that they believe is relevant to this topic, they may make a request for that course to count toward the certificate on a case-by-case basis.

Note: Previously circulated versions of this proposal included MSE490 as a possible course. However, it was removed due to it having a 0.25 credit weight, which would not allow students to achieve the necessary total 1.5 credit weight for a certificate.

7 Consultation

The concept of more curricular acknowledgement and integration of JEDI consideration within FASE has been raised by the Engineering Society and within the Engineering Equity, Diversity and Inclusion Action Group (EEDIAG). Based on this advocacy, initial consultation and development of this certification was guided by:

- Associate Director, Access & Inclusive Pedagogy
- Associate Dean, Cross-Disciplinary Programs
- Assistant Dean, Diversity, Inclusion and Professionalism
- Assistant Director, Cross-Disciplinary Programs Office
- Director, ILEAD
- Director, ISTEP

Further consultation on the proposal was then mediated through sharing and discussing the rationale and proposed program requirements with key stakeholders, including:

- President and Equity and Inclusion Director of the Engineering Society
- Student, staff and faculty membership of the EEDIAG
- Engineers without Borders (EWB) and National Society of Black Engineers (NSBE) Executive Leadership (as drafters of “Report on Course Updates to Include Explicit Equity Content”)
- Inclusion, Diversity, Equity Advisory (IDEA) Committee

The following FAS academic programs were also consulted, as was the FAS Dean’s Office:

- Critical Studies in Equity and Solidarity Program at New College
- Institute for the History & Philosophy of Science & Technology
- Women and Gender Studies Institute

8 Resources

Administration of the certificate program will be managed through the Faculty of Applied Science & Engineering’s Cross-Disciplinary Programs Office as part of its regular activities with guidance (where deemed appropriate) from the Office of Diversity, Inclusion and Professionalism.

Spaces in the existing FAS courses in the course requirements will be included in FASE's annual Inter-Divisional Teaching request. The aforementioned engineering electives already exist in other departments within their regular budgets.

9 Oversight & Accountability: Review

Minors and certificates in the Faculty of Applied Science & Engineering are subject to periodic review in conjunction with the review of the Cross-Disciplinary Programs Office.

10 Summary of Process Steps & Approvals

Steps	Dates
Development/consultation within CDPO	Summer 2022
Endorsement by partnering Faculties/Divisions	October 2022
Endorsement by Undergraduate Curriculum Committee	January 2023
Consultation with Dean's Office	January 2023
Consultation with VPAP and FAS Dean's Office	January-February 2023
Endorsement of Executive Committee of FASE Council	February 7, 2023
Approval of FASE Council	February 27, 2023

Appendix A: Proposed Learning Outcomes and Undergraduate Degree-Level Expectations

The Faculty of Applied Science & Engineering aims to provide all of its undergraduate students with an education that will encourage them to be leaders in society in developing solutions to its most pressing problems. In order to achieve this goal, each graduate will have achieved the Undergraduate Degree-Level Expectations for the BASc described below.

Engineering minors and certificates are designed to recognize students for focusing their degree-program electives in a particular area of study. They are optional structures above and beyond a student's degree requirements and are therefore enhancements to existing rigorous degree-level expectations for engineering programs.

The certificate is structured to scaffold existing learning opportunities at the intersection of engineering and social considerations. In addition to the following Undergraduate Degree-Level Expectations, upon completion of the certificate program, students will be able to:

1. Contextualize the importance of key justice, equity, diversity and inclusion concepts within engineering and design.
2. Navigate the interconnectedness of social and technological development.
3. Create an environment conducive for the engagement of others within engineering contexts.

Degree Level Expectations for Graduates Receiving the Degree of Bachelor of Applied Science

Faculty of Applied Science and Engineering University of Toronto

1. Degree Learning Objectives and Requirements

Overall Learning Objectives

The Faculty of Applied Science and Engineering aims to provide all of its undergraduate students with an education that will allow them to be leaders in society in developing solutions to its most pressing problems. Our graduates will be able and inspired to:

- be leading practitioners of engineering and engineering design
- be known for their technical literacy as well as their knowledge of mathematics and the basic sciences and the role of technology in society
- be able to formulate and solve problems in complex systems independently and in teams
- pursue independent lifelong learning within their field of study and more broadly
- be prepared for careers, including graduate programs, that build upon their advanced technical knowledge
- participate meaningfully as leaders in society

In order to achieve this, each graduate will have achieved the following general learning objectives:

- a. Depth of knowledge that cultivates critical understanding and intellectual rigour in at least one engineering discipline.
- b. Competencies in learning and applying knowledge to solve problems facing society and that are fundamental to responsible and effective participation in the workplace, in the community, in scholarly activity, and in personal life:
 - i. Critical and Creative Thinking
 - ii. Oral and Written Communication
 - iii. Quantitative Reasoning
 - iv. Teamwork
 - v. Information Literacy
 - vi. Ethical Thinking and Decision-Making
- c. Breadth of knowledge across mathematics, basic sciences, engineering sciences, engineering economics and engineering design that cut across the engineering disciplines and across a range of nontechnical areas including the humanities and social sciences and an awareness of the impact of technology on society.
- d. Integration of skills and knowledge developed in a student's course of study through a capstone experience in the upper years.

Requirements to Graduate

In order to graduate with a BAsC degree, each student in the Faculty of Applied Science and Engineering will have completed a full undergraduate program as outlined in the Faculty Calendar within nine calendar years of first registration, exclusive of mandatory absences from his/her program. Current programs include: Chemical, Civil, Computer, Electrical, Industrial, Mineral, Materials and Mechanical Engineering as well as the BAsC in Engineering Science.

The practice of engineering is regulated, by statute, in all Canadian provinces and territories. To become a Professional Engineer (P.Eng.), an individual must satisfy the requirements of the licensing bodies.

These requirements include a degree from an accredited program, successful completion of a professional practice examination in engineering law and ethics, and suitable experience. At present, all programs in the Faculty of Applied Science and Engineering are accredited and evaluated regularly by the Canadian Engineering Accreditation Board (CEAB) of the Canadian Council of Professional Engineers. Therefore, graduation from the Faculty may lead to registration in the provincial or territorial licensing organization, in accordance with licence requirements. No student will be permitted to graduate who does not meet these requirements.

The criteria set out by the CEAB are designed to ensure that each graduate has a foundation in Mathematics and Basic Sciences, a broad preparation in Engineering Sciences and Engineering Design and an exposure to non-technical subjects (complementary studies) that complement the technical aspects of the curriculum. Basic Sciences must include physics and chemistry and also may include elements of life sciences and earth sciences; they impart an understanding of natural phenomena. Engineering Sciences normally involve Mathematics and Basic Sciences but carry knowledge further to creative applications. Complementary Studies include the humanities, social sciences, arts, management, engineering economics and communication skills.

Each program in the Faculty consists of a technical component and complementary studies component. The curriculum for students in their early years forms a basis in the fundamental subjects prior to subsequent specialization in the various engineering disciplines. Students are able to choose from a range of technical electives in their senior years. In the senior years, all programs contain a capstone experience through a design project, which integrates their skills and knowledge and provides students with the opportunity to carry out original work in their chosen fields of study.

There are a set of common requirements, described below, that cut across all programs in the following categories: Coursework, Promotion, English Proficiency, and Practical Experience. In this context, a course is defined as one half-course equivalent, which may consist of a half course ("S", "F" or "H") or half of a full-year "Y" course.

1. **Coursework:** Each program will have courses that provide the following:
 - a. Complementary Studies Electives
 - b. A basic knowledge of Engineering Economics
 - c. Technical Electives

- d. Courses with substantial design content in Years 1, 2 and/or 3
 - e. Capstone course(s) in Years 3 and/or 4 with strong integrative, design and independent work elements
 - f. Across all four years, programs will provide sufficient opportunities for the development of professional awareness and practice.
2. **Promotion:** All undergraduate programs will consist of eight Fall and Winter Sessions taken in order.
- a. To gain credit for a session a student must:
 - i. satisfy the academic regulations to proceed to the succeeding session as described in the calendar and
 - ii. not be subsequently required to repeat the session for which credit is to be gained, and
 - iii. achieve a course mark of 50% or greater in every course taken as part of the academic load in a session, and
 - iv. not have any outstanding designations of 'standing deferred', 'incomplete' or 'No Grade Available' for any course in any session.
 - b. To be eligible to graduate, each student must attain a weighted Session Average of 60% or greater in the final session of their program. Any student who does not achieve a weighted Session Average of 60% in their final session (4W), but has attained a weighted Session Average that allows them to proceed to the next session on probation, shall repeat the final session and achieve a weighted Session Average of 60% or greater to graduate.
3. **English Proficiency:** Each student must show an ability to write English coherently and correctly. Every student will also take at least one course that includes a written communication component within their curriculum. Satisfactory completion of the course or courses is required for graduation.
4. **Practical Experience:** The Faculty requires that all students complete a minimum of 600 hours of practical work before graduation.

2. Degree Level Expectations for the Bachelor of Applied Science

Depth and Breadth of Knowledge

The Faculty ensures that a student has mastered a body of knowledge with appropriate depth by requiring that each student completes the requirements of one of the degree Programs of Study (POST) as described in the Faculty Calendar. The curriculum for students in First Year forms a common basis in the fundamental subjects, including the natural sciences and mathematics, prior to a subsequent specialization in the various engineering disciplines. Each program consists of a technical component and a complementary studies component.

Critical analysis and thinking and analytical skills are emphasized through the student's exposure to an increasingly sophisticated understanding of their program of study. Specialization within the discipline is developed through technical electives taken in the 3rd and 4th years of study. A detailed knowledge of and experience in design is ensured through

the Design Course requirements, beginning with courses in the first three years as well as the Capstone course(s) in each program. Opportunity to further develop these skills is provided through a research thesis that is available in most POSTs.

The Faculty assures that students have breadth of knowledge in a number of ways. Breadth across engineering is assured through a First Year of study that prepares a student for any of the programs of study. Breadth beyond engineering is developed through the Complementary Studies Electives as well as the Engineering Economics requirement.

Knowledge of Methodologies

Every POST has requirements which demonstrates a student's understanding of the methods of engineering design. Students in all engineering programs must successfully complete courses with substantial design in their first three years and a Capstone design course in their senior years. These courses require students to evaluate the appropriateness of various approaches to analyze and solve the design problem and also to devise and sustain arguments for their design. In most POSTs, students have the opportunity to participate in a research thesis course that familiarizes them with the specific methodologies currently in use in the development of knowledge in their discipline.

Application of Knowledge

The application of science and mathematics to solve problems is fundamental to all programs in Engineering and therefore is required in many of the courses within all POST. A minimum level of instruction in Engineering Science and Engineering Design is required, both of which directly involve the application of knowledge.

Communication Skills

The Faculty requires students to communicate information, arguments and analysis accurately and reliably, orally and in writing, to specialist and non-specialists audiences. The requirement for courses with substantial engineering design that are required across all programs require a series of technical reports and presentations with direct involvement with our Engineering Communication Program. In addition, our Capstone Design Courses and research theses all involve a written report and most involve oral presentations. The course requirements for instruction in Complementary Studies also adds to the education our students receive in communication skills. Also, the English Proficiency requirement insures a minimum level of writing ability for all graduates.

Awareness of Limits of Knowledge

Each POST develops, through a sequence of courses starting at the 100-series or 200-series and culminating at the 300-series or 400-series or 500-series of courses, an understanding of a discipline as it is currently appreciated by educators who are at the same time involved in original scholarship in the subject area. The course content at the upper series level is designed, in part, to provide students with an appreciation of the uncertainties, ambiguities and limitations of knowledge in the specific area.

Autonomy and Professional Capacity

The development of an awareness and understanding of professional practice is required for all POST. The required design courses require students to work in teams and also accept responsibility for their own contributions. Students are required to make their own decisions for their own learning through selection of their technical and nontechnical electives. Finally, in completing their course requirements, the Faculty expects strict adherence by students to the Code of Behaviour on Academic Matters, which requires students to not tolerate or encourage the creation of an environment of cheating, misrepresentation or unfairness.

3. Other Degree Level Expectations

The Faculty requires all students to have developed competency in several areas of learning and applying knowledge not identified explicitly in the previous sections. In particular, the Faculty requires students to have developed competencies in quantitative reasoning and in information literacy.

Quantitative reasoning is considered the ability to identify, assemble and interpret quantitative information and make and test hypotheses based on such data. Development of this competency is an explicit part of all POSTs offered by the Faculty.

The Faculty requires all students to develop an advanced understanding of how to obtain information, manipulate and evaluate it and bring diverse sources together to develop a comprehensive understanding of specific issues, solve problems or apply the scientific method to create further knowledge in the discipline. These advanced information literacy skills are developed through the studies in their concentration(s) and are demonstrated in the advanced courses required in each POST.

Appendix B: Proposed Calendar Copy

Course Requirements for the Certificate in Justice, Equity, Diversity and Inclusion

Engineering is socio-technical in nature - a technical process which both exerts and is influenced by social forces. Engineers are agents of social change and a strong understanding and ability to facilitate social considerations within engineering, guided by underlying values of justice, equity, diversity and inclusion (JEDI), is in greater demand than ever before. The value of these ideals is being quickly recognized within post-secondary institutions, industry and the corporate world, research spaces and the profession's regulatory bodies, with more institutions and businesses explicitly integrating JEDI considerations into their vision and practices.

All undergraduate Engineering students are eligible to participate in this certificate program. Students who complete the requirements of the Certificate will receive a notation on their transcript upon graduation.

Eligible courses for the certificate fall into 3 broad categories: Equity & Justice, Technology & Society, Ethics and/or Broader Considerations. The requirements for the Certificate are the successful completion of 1 course from each category and no more than 2 of the 3 courses can have a non-FASE affiliated course code:

Equity and justice

- TEP324H1: Engineering and Social Justice
- WGS273H1: Gender and Environmental (In)Justice
- WGS390H1: Land-ing: Indigenous and Black Futurist Spaces
- CSE240H1: Introduction to Critical Equity and Solidarity Studies

Technology and society

- CME259H1: Technology in Society and the Biosphere I
- ESC203H1: Engineering and Society
- HPS202H1: Technology in the Modern World
- HPS205H1: Science, Technology, and Empire

Ethics and broader considerations

- TEP447H1: The Art of Ethical & Equitable Decision Making in Engineering
- HPS200H1: Science and Values
- TEP449H1: Intercultural Communication and Leadership
- TEP445H1: The Power of Story: Discovering Your Leadership Narrative

The Faculty of Arts and Science courses listed above represent courses where we have agreement to offer reserved spaces for Engineering students. Within FAS there are many other courses that connect to these concepts. If a student is enrolled in a course that they believe is relevant to this topic, they may make a request for that course to count toward the certificate on a case-by-case basis.

Notes:

Availability of the courses for timetabling purposes is not guaranteed; the onus is on the student to ensure compatibility with their timetable. Students must secure approval from their home department before selecting any elective outside their departmental approved list.

Courses	Term	Lec	Lab	Tut	Wgt
Fall Courses					
CSE240H1 - Introduction to Critical Equity and Solidarity Studies	F	2	-	1	0.5
ESC203H1 - Engineering and Society	F	2	-	2	0.5
HPS200H1 - Science and Values	F/S	2	-	-	0.5
HPS202H1 - Technology in the Modern World	F	2	-	1	0.5
TEP445H1 - The Power of Story: Discovering Your Leadership Narrative	F/S	2	-	1	0.5
TEP447H1 – The Art of Ethical & Equitable Decision Making in Engineering	F	3	-	-	0.5
WGS273H1 - Gender and Environmental (In)Justice	F	2	-	1	0.5
Winter Courses					
CME259H1 - Technology in Society and the Biosphere I	S	3	-	1	0.5
HPS200H1 - Science and Values	F/S	2	-	-	0.5
HPS205H1 - Science, Technology, and Empire	S	2	-	1	0.5
TEP324H1 – Engineering and Social Justice	S	2	-	2	0.5
TEP445H1 - The Power of Story: Discovering Your Leadership Narrative	F/S	2	-	1	0.5
TEP449H1 – Intercultural Communication and Leadership	S	2	-	2	0.5
WGS390H1 - Land-ing: Indigenous and Black Futurist Spaces	S	2	-	-	0.5



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3735 Revised

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
Faculty Council (February 27, 2023)

From: Professor Evan Bentz
Chair, Undergraduate Curriculum Committee

Date: January 23, 2023; revised February 10, 2023

Re: **Proposed Session Dates for the 2023-2024 Academic Year**

REPORT CLASSIFICATION

This is a major policy matter that will be considered by the Executive Committee for endorsing and forwarding to Faculty Council for vote as a regular motion (requiring a simple majority of members present and voting to carry).

SUMMARY

The Undergraduate Curriculum Committee is responsible for determining session dates for each academic year through consultation with the Colleges and Residences, as well as with the University holiday schedule. These session dates have been reviewed and approved by the Undergraduate Curriculum Committee.

PROCESS AND CONSULTATION

The proposed 2023-2024 session dates have been reviewed and approved by the Undergraduate Curriculum Committee, which is comprised of teaching staff representatives from the Faculty's departments and institutes; undergraduate student representatives; the Vice-Dean, Undergraduate; the Vice-Dean, First Year; the Director, First Year Curriculum; the Associate Dean, Cross-Disciplinary Programs; the Assistant Dean and Director, Diversity, Inclusion and Professionalism; and the Faculty Registrar.

The Office of the Vice Provost, Students, compiles a list of dates for religious observances which may require accommodation. The dates for the 2023-2024 year can be found at: <https://www.viceprovoststudents.utoronto.ca/policies-guidelines/accommodation-religious/>.

Proposed Engineering Session Dates for 2023-2024

	Engineering	Arts and Science
Labour Day	September 4 th	September 4 th
First day of fall classes	September 7 th	September 7 th
Thanksgiving	October 9 th	October 9 th
Fall Study Break	November 6 th to November 10 th	November 6 th to November 10 th
Last day of fall classes	December 7 th	December 7 th
Number of instructional days	59 days / 11.8 weeks	-
Exam Study Day / Makeup Monday	December 7 th	December 7 th / December 8 th
Fall exams start **Includes Saturdays and Sundays, as needed**	December 8 th	December 9 th
Fall exams end	December 20 th	December 20 th
Fall Emergency Exam Day	January 13 th , 2024	January 13 th , 2024
First day of winter classes	January 8 th 2024	January 8 th , 2024
Reading Week	February 19 th to February 23 rd	February 19 th to February 23 rd
Good Friday	March 29 th	March 29 th
Last day of classes	April 12 th	April 5 th
Number of instructional days	64 days/12.8 weeks	-
Winter study days, including Exam Jam	April 15 th	April 8 th / April 9 th
Winter exams start **Includes Saturdays and Sundays, as needed**	April 16 th	April 10 th
Winter exams end	April 30 th	April 28 th
Winter Emergency Exam Day	May 1 st	April 29 th
FAS Exams and Engineering Lectures Overlapping Period	April 10 th – April 16 th (5 exam days)	

* FAS dates not confirmed by FAS currently: as such these start dates are estimates.

Proposed APSC Session Dates for Summer 2023

	Engineering T-Program	Engineering	Arts and Science (Estimate)
First day of lectures (F and Y session course)	May 8 th , 2023	May 8 th , 2023	May 8 th , 2023
Victoria Day	May 22 nd	May 22 nd	May 22 nd
Last day of lectures for F session courses/(Y pause)	June 19 th	June 19 th	June 20 th
Makeup Class	-	-	-
F session course Study Break	June 20 th	June 20 th	June 20 th
Exam Period for F Session Course	June 21 st -27 th	June 21 st -27 th	June 21 st - June 26 th
UofT President's Day Closure	June 30 th	June 30 th	June 30 th
Deferred Exams	-	-	-
Canada Day	July 3 rd	July 3 rd	July 3 rd
First day of lectures for S session course	July 4 th	July 4 th	July 4 th
Civic Holiday	August 7 th	August 7 th	August 7 th
Last day of lectures for S and Y session course	August 15 th	August 15 th	August 14 th
FAS Makeup Class	-	-	-
Study Break	August 16 th	Aug 16 th	August 16 th
Exam Period for S and Y session courses	August 17 th - August 22 nd	August 17 th - August 22 nd	August 16 th - August 18 th

RECOMMENDATION FOR FACULTY COUNCIL

THAT the session dates for the 2023-2024 academic year be approved as described in Report 3735 Revised.



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3736

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
Faculty Council (February 27, 2023)

From: Professor Evan Bentz
Chair, Undergraduate Curriculum Committee

Date: January 23, 2023

Re: **Major Curriculum Changes for the 2023-2024 Academic Year**

REPORT CLASSIFICATION

This is a major policy matter that will be considered by the Executive Committee for endorsing and forwarding to Faculty Council for vote as a regular motion (requiring a simple majority of members present and voting to carry).

SUMMARY

The Undergraduate Curriculum Committee is tasked with managing the curriculum change process for the Faculty. This report summarizes course changes proposed for the 2023-2024 academic year.

PROCESS AND CONSULTATION

These changes have been reviewed and approved by the Undergraduate Curriculum Committee, which is comprised of teaching staff representatives from the Faculty's departments and institutes; undergraduate student representatives; the Vice-Dean, Undergraduate; the Vice-Dean, First Year; the Director, First Year Curriculum; the Associate Dean, Cross-Disciplinary Programs; the Assistant Dean and Director, Diversity, Inclusion and Professionalism; and the Faculty Registrar. The Committee meets regularly to review and approve proposed changes to the undergraduate curriculum. The impact of these changes on students in the relevant programs has been considered.

RECOMMENDATION FOR FACULTY COUNCIL

THAT the proposed curriculum changes for the 2023-2024 academic year, as described in Report 3736, be approved.

PROPOSED CURRICULUM CHANGES

1. ELECTRICAL & COMPUTER ENGINEERING

1.1. Update Graduate Attributes for **ECE331H1F: Analog Electronics**

CURRENT GA: 3C

PROPOSED GA: 2D

- *Updated to match current content of course.*

1.2. Update Graduate Attributes for **ECE454H1F: Computer Systems Programming**

PROPOSED GA update: 2B, 3A, 4D, 5A, 5B

- *Updated to match current content of course.*

1.3. Update Graduate Attributes for **ECE367H1F: Matrix Algebra and Optimization**

PROPOSED GAs: 1A, 1C, 2C, 3B, 5A

- *Updated to match current content of course.*

1.4. Update Graduate Attributes for **ECE520H1F: Power Electronics**

PROPOSED GAs: 1C, 2A, 2C, 4D, 5B

- *Updated to match current content of course.*

1.5. Update Graduate Attributes for **ECE526H1F: Power Systems Protection & Automation**

PROPOSED GAs: 1C, 2B, 4D, 5B, 5C

- *Updated to match current content of course.*

Photonic Devices

1.6. Update Graduate Attributes for **ECE427J1F: Photonic Devices**

PROPOSED GA assignment: 1A, 1B, 1C, 5B, 7A

- *Updated to match current content of course.*

2. CHEMICAL ENGINEERING & APPLIED CHEMISTRY

2.1. Move **CHE223: Statistics** to the Fall semester and **CHE249: Engineering Economic Analysis** to the Winter semester

- *This would allow for the opportunity to create better alignment and more integration between CHE204: Laboratory I and CHE223 in the Fall semester.*

NOTE: This would change the second-year total contact hours from:

Fall 17/6/9; Winter 16/8/7

to

Fall 16/6/9; Winter 17/8/7

2.2. Update contact hours for **CHE299: Communication**

CURRENT contact hours: 0/0/2

PROPOSED contact hours: 1/0/1

- *CHE299 is currently taught through two activity-based tutorial hours each week focused on the development of communication skills, which are applied and assessed through deliverables tied to other core Chemical Engineering courses. This approach gives students an opportunity to practice and immediately apply communication principles within each tutorial while supervised by a sessional instructor from the Engineering Communication Program. The distribution of students across four tutorials taught by four instructors provides a small class environment that is best for active learning, however, it provides limited opportunity for consistent, direct instruction on communication principles.*
- *Over the last few years, the course coordinator has produced a series of lectorettes that students are asked to review in preparation for specific tutorials and assignments. These short online lectorettes are designed to provide consistent instruction of communication principles that prepare students for the active learning environment of the tutorial classroom. Views of these videos, unfortunately, are inconsistent. Because students view these as “additional resources” rather than core course content, they often opt out of watching instructional content that is critical to the course. Having a designated lecture hour in their timetable will acknowledge the required nature of these lectorettes.*
- *Overall, this change will result in more consistent communication instruction for 2nd year Chemical Engineering students and better scaffold their continued development of communication skills.*

NOTE: There would be no change to second-year contact hours.

2.3. Add courses to current Technical Elective list available to students in Chemical Engineering

APS360H1: Applied Fundamentals of Deep Learning
APS502H1: Financial Engineering
BME330H1: Patents in Biology and Medical Devices
BME412H1: Introduction to Biomolecular Engineering
BME530H1: Human Whole Body Biomechanics
BME595: Medical Imaging
CHM416H1: Separation Science
CHM456H1: Organic Materials Chemistry
CHM457H1: Polymer Chemistry
CIV220H1: Urban Engineering Ecology
CIV531H1: Transport Planning
ECE345H1: Algorithms and Data Structures
ECE368H1: Probabilistic Reasoning
ECE421H1: Introduction to Machine Learning
ECE446H1: Sensory Communication
HMB201H1: Introduction to Fundamental Genetics and its Applications
IMM250H1: The Immune System and Infectious Disease
MIE408H1: Thermal and Machine Design of Nuclear Power Reactors
MIE519H1: Advanced Manufacturing Technologies
MGY377H1: Microbiology I: Bacteria
MSE438H1: Computational Materials Design
MSE458H1: Nanotechnology in Alternate Energy Systems
PCL201H1: Introduction to Pharmacology and Pharmacokinetic Principles
PCL302H1: Pharmacodynamic Principles
PSL300H1: Human Physiology I

- Over the last several years, the number of courses that students have been requesting approval for as technical electives has been growing. This is, in part, due to more students seeking to complete certificates and minors. The addition of the attached list of courses to those already listed in the calendar will make these previously-approved courses available as technical electives without the need for students to seek approval from our UG Office.*

2.4. Update course pre-requisites associated with CHE courses

2F

CHE204: Chemical Engineering and Applied Chemistry - Laboratory I - APS110 and CHE112

CHE208: Process Engineering - CHE112

CHE211: Fluid Mechanics - CIV100 and MAT187

CHE220: Applied Chemistry I - Inorganic Chemistry - CHE112

CHE221: Calculus III - MAT186 and MAT187

CHE249: Engineering Economic Analysis - MAT187 and CHE223

CHE299: Communication – none

2S

CHE205: Chemical Engineering and Applied Chemistry- Laboratory II - CHE204
CHE210: Heat and Mass Transfer - CHE211 and CHE221
CHE213: Applied Chemistry II - Organic Chemistry - APS110 and CHE112
CHE222: Process Dynamics: Modeling, Analysis and Simulation - CHE208, CHE221, MAT188
CHE223: Statistics - none
CHE230: Environmental Chemistry - CHE112

3F

CHE304: Chemical Engineering and Applied Chemistry- Laboratory III - CHE205, CHE208, CHE210
CHE323: Engineering Thermodynamics - CHE112 and CHE221
CHE324: Process Design - CHE208
CHE332: Reaction Kinetics - CHE210 and CHE222
CHE399: Professional Engineering Consultancy - CHE299

3S

CHE305: Chemical Engineering and Applied Chemistry- Laboratory IV - CHE304, CHE323, CHE324, CHE332
CHE311: Separation Processes - CHE208
CHE322: Process Control - CHE222 and APS106
CHE333: Chemical Reaction Engineering - CHE323, CHE324, CHE332
CHE334: Team Strategies for Engineering Design - CHE249, CHE324 and CHE332

Outside the CHE core courses

CHE353: Engineering Biology - none
CHE451: Petroleum Processing - none
CHE507: Data-based Modelling for Prediction and Control - CHE322

- *CHE currently has a very small number of courses with pre-requisites as compared to other programs. The attached list of pre-requisite courses addresses this issue.*

2.5. Remove **CHE298: Communication** from course calendar

- *This course has not been offered since 2014.*

3. CIVIL & MINERAL ENGINEERING

Mineral Program

3.1. Update scheduling and calendar description for **MIN120: Insight into Mineral Engineering**

CURRENT scheduling (LEC/PRA/TUT): 3/2/1
 PROPOSED scheduling (LEC/PRA/TUT): 4/0/1

CURRENT calendar description: A comprehensive introduction into the global minerals industry using international regulatory requirements as a thematic structure. Engineering applications together with current and emerging issues are emphasized throughout. Principal topics include: mineral resources in the economy; land and mineral ownership; legal and environmental issues; mineral exploration; surface and sub-surface mine development and management; fundamentals of mineral processing; mineral industry finance. Graphics communication skills are developed in the associated laboratory sessions, and a visit to an operating mine is used to place the course material in context.

PROPOSED calendar description: A comprehensive introduction to the global minerals industry using international regulatory requirements as a thematic structure. Engineering applications together with current and emerging issues are emphasized throughout. Principal topics include: mineral resources in the economy; stakeholder concerns and responsible mining; mineral exploration; surface and sub-surface mine development and operation; fundamentals of mineral processing; mineral industry finance.

- *Teaching of MIN120 is more efficient if the course is scheduled with this timing versus the previously approved schedule. CEAB AU count is unchanged by this adjustment.*

4. CROSS-DISCIPLINARY PROGRAMS

4.1. Update course delivery of **APS360H1: Applied Fundamentals of Deep Learning for the summer term**

Previous (pre-COVID) summer course delivery: **APS360H1 Y** – In-person

PROPOSED course delivery for summer only: **APS360H1 Y** (May-August) - Online delivery

Fall and Winter will remain as **APS360H1 F** and **APS360H1 S** – In-person.

4.2. Update course delivery of **JRE300H1 F: Fundamentals of Accounting and Finance for the summer term**

Previous (pre-COVID) summer course delivery: **JRE300H1 F** – In-person

PROPOSED course delivery for summer only: **JRE300H1 F** (May-June) - Online delivery

Fall and Winter will remain as **JRE300H1 F** and **JRE300H1 S** – In-person

4.3 Update course delivery of **JRE410H1 F: Markets and Competitive Strategy for the summer term**

Previous (pre-COVID) summer course delivery: **JRE410H1 F** – In-person

PROPOSED course delivery for summer only: **JRE410H1 F (May-June) - Online delivery**

Fall and Winter will remain as JRE410H1 F and JRE410H1S – In-person



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3734

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
 Faculty Council (February 27, 2023)

From: Professor Marianne Hatzopoulou
 Chair, Engineering Graduate Education Committee (EGEC)

Date: January 16, 2023

Re: **EGEC Information Update**

REPORT CLASSIFICATION

This is a routine or minor policy matter that has been approved by the Engineering Graduate Education Committee. It will be considered by the Executive Committee for approval and forwarding to Faculty Council for information.

NEW COURSES APPROVED

BME 1520	Applications of universal design for preventing injury
BME 1540	Designing and testing gaming technologies for rehabilitation

NAME CHANGE

APS 1035	Name change to "Taking a New Venture to Market" From "Technology Sales for Entrepreneurs"
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RECOMMENDATION FOR FACULTY COUNCIL

For information.



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3738

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
 Faculty Council (February 27, 2023)

From: Professor Daniel Posen
 Chair, Undergraduate Assessment Committee

Date: January 16, 2023

Re: **Default Selection of Courses Marked Extra**

REPORT CLASSIFICATION

This is a routine or minor policy matter that will be considered by the Executive Committee for approving and forwarding to Faculty Council for information.

BACKGROUND

Undergraduate students in FASE often take more courses than are needed for their program. Existing regulations require that these courses be designated as “Extra,” per the policy copied below (Regulation VIII, subsection 9, “Designating Credit Courses as Extra”). The general expectation is for students to keep track of their own degree requirements. Undergraduate advisors check degree progress periodically and notify students of potentially Extra courses, however it is not always possible to alert these situations prior the deadline for declaring a course Extra. There is currently no policy to manage situations in which it is discovered retroactively that a student has too many courses for their degree.

With the approval of their department’s undergraduate academic advisor or Chair’s designate for undergraduate studies, a student may elect to take an extra course. These courses cannot be used for degree program credit. Their marks are shown on the transcript but not included in the calculation of sessional averages. Any course taken by a student in a degree program that is not listed in the curriculum requirements for that program in the “Curriculum and Programs” section of the academic calendar will be designated as “EXT.” This includes courses taken for interest or additional elective courses beyond what is prescribed in a program’s curriculum.

The deadline for requesting any credit course be changed to an extra course is the same as that for dropping a course. The deadline for requesting an extra course be changed to a credit course (if applicable) is the same as that for adding a course.

PROPOSED POLICY

To be added to the existing regulation (Section VIII, subsection 9):

A student planning to take more courses than required for their program should select which courses will count as Extra. If no such designation is made by the corresponding deadline and Extra courses must be declared retroactively, the following rules will apply to determine which courses are maintained for credit:

1. Chronology: courses taken in earlier semesters count toward the degree; courses taken later will be designated as Extra.
2. Alphanumeric: if multiple courses were taken in the same semester, and only a subset can count toward the degree, the course code(s) that appears earlier in the alphabet will count toward the degree (e.g., course code ABC123 would take precedence over ABC124 or BCD123).

PROCESS AND CONSULTATION

This policy was developed by the Standing Committee on Examinations, and approved by majority vote on August 4, 2021. It was reaffirmed in later 2022 by the (now renamed) Undergraduate Assessment Committee for submission to Faculty Council.

RECOMMENDATION FOR COUNCIL

For information.



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3739

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
 Faculty Council (February 27, 2023)

From: Professor Daniel Posen
 Chair, Undergraduate Assessment Committee

Date: January 16, 2023

Re: Clarification of Policy regarding Return of Graded Work Prior to Drop Deadline

REPORT CLASSIFICATION

This is a routine or minor policy matter that will be considered by the Executive Committee for approval and forwarding to Faculty Council for information.

BACKGROUND

Current academic regulation Section XI, subsection 4a is below.

[...] At least one piece of session work worth at least 10% of a student's performance, whether lab report, assignment, essay, etc., shall be returned to the student prior to the last day for withdrawal from the course without academic penalty.

The Undergraduate Assessment Committee would like to update/clarify the policy to reflect that:

- 1) It is acceptable to meet the policy by returning multiple pieces of work cumulatively worth at least 10%;
- 2) The policy applies to the class overall rather than each individual student (e.g., if a student misses the midterm due to illness, there may be no graded work to return prior to the deadline).

PROPOSED POLICY

We propose to update the wording as follows:

One or more pieces of session work cumulatively worth at least 10% of the final course grade shall be returned to the class prior to the last day for withdrawal from the course without academic penalty. These may include lab reports, assignments, essays, quizzes, etc.

PROCESS AND CONSULTATION

This policy was approved by the Undergraduate Assessment Committee on December 8, 2022

RECOMMENDATION FOR COUNCIL

For information.



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Report No. 3737

MEMORANDUM

To: Executive Committee of Faculty Council (February 7, 2023)
Faculty Council (February 27, 2023)

From: Professor Elodie Passeport
Chair, Teaching Methods and Resources Committee

Date: January 30, 2023

Re: **Revision of Teaching Methods and Resources Committee Manual**

REPORT CLASSIFICATION

This is for the Executive Committee's and Faculty Council's information (no vote).

BACKGROUND

Each standing committee is required to maintain a manual of operation which provides details particular to its responsibilities and activities.

At its December 16, 2021 meeting, Faculty Council approved *Report 3693 Revised: Updated Bylaws of the Council of the Faculty of Applied Science & Engineering*. This report includes a recommendation of the Working Group to Update Standing Committees of Council that instead of Council approving each standing committee manual of operation (as was the case), each committee's terms of reference, domain and membership composition would be specified in the Council bylaws and reviewed at least every five years by the committee, with the bylaws updated as necessary.

The Working Group also recommended that each standing committee review its manual of operation and update or re-affirm it without change, at least every five years or more frequently as needed. Any changes to the manuals of operation will be approved by the Speaker of Faculty Council and shared with Faculty Council (including posting them on the Council webpage).

The Teaching Method and Resources Committee (TMRC) manual was last revised on October 8, 2014 and therefore needed updating.

PROPOSED

The committee proposes to adopt the new manual, which is now in the new FASE template for standing committee manuals. It has also applied minor editorial corrections and deleted two duties from the previous manual that are no longer administered by the TMRC, namely:

- 1) "Prepare nominations for teaching awards administered outside the Faculty"

This is now routinely done by awards committees within each department and unit, along with the office of the FASE Director, Awards and Honours.

- 2) "Report the decision on Faculty Teaching Awards to Council"

The TMRC selects FASE Teaching Awards and share their decision directly to the FASE Director, Awards and Honours.

Clean and track-changes copies of the revised manual are attached.

CONSULTATION PROCESS

The TMRC members reviewed and approved the revised manual. Feedback was received from the Secretary of Faculty Council, and the revised manual was approved by the Speaker of Faculty Council.



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Manual for the
Teaching Methods and Resources Committee
A Standing Committee of Faculty Council

**Approved by the Council of the Faculty of Applied
Science & Engineering: February 1, 1999
Last Revision approved: February 27, 2023**

Manual for the Teaching Methods and Resources Committee

Preamble

Each Standing Committee of Faculty Council is required to have a manual, approved by the Speaker of Faculty Council and posted on the Faculty Council [webpage](#), which provides detail particular to the committee. The purpose of the manual is to promote clarity and consistency in committee responsibilities and operations.

Each Standing Committee and the Academic Appeals Board (Undergraduate) are to be operated within the guidelines provided by the [Procedures for Committees of Council](#). These procedures provide information on the committee responsibilities, membership structure, chair and vice-chair, and meeting operating procedures.

1. Name of Committee

Teaching Methods and Resources Committee (TMRC)

2. Terms of Reference

On behalf of Faculty Council, each Standing Committee, being comprised of representative of stakeholders within the domain of the committee and supported by subject matter experts and administrative staff, is responsible, with respect to their domain, to:

1. Provide a forum for the full range of stakeholder voices to discuss present practice and new proposals;
2. Pursue best practice: investigate, study, report on and promote;
3. Review, periodically, policies and procedures;
4. Recommend, as appropriate, changes to policy and procedures;
5. Carry out specific, defined duties; and
6. Report regularly to Council on its activities and intentions.

3. Term of Office

July 1 of each academic year until June 30 of that academic year.

4. Domain

With respect to undergraduate and graduate classroom/course instruction, the Teaching Methods and Resources Committee is responsible for the domain including:

- a) Teaching methods, resources, and aids; and
- b) Setting guidelines for the evaluation of teaching effectiveness and rewarding teaching effectiveness via the Faculty Teaching Awards.

5. Membership

The membership of the Teaching Methods and Resources Committee consists of:

Constituent Group	Number of Reps	Length of Term
5.1. Teaching Staff <ul style="list-style-type: none"> • Chemical Engineering & Applied Chemistry • Civil & Mineral Engineering • Electrical & Computer Engineering • Engineering Science • Institute for Aerospace Studies • Institute for Studies in Transdisciplinary Engineering Education & Practice • Institute of Biomedical Engineering • Materials Science & Engineering • Mechanical & Industrial Engineering 	9 (One from each Academic Unit)	3 years
5.2. Members-at-Large <ul style="list-style-type: none"> • Undergraduate Students • Graduate Students • Alumni/ae 	2 1 1	1 year 1 year 3 years
5.3. Ex officio <ul style="list-style-type: none"> • Vice-Dean, First Year • Vice-Dean, Undergraduate • Registrar 	1 1 1	Ongoing Ongoing Ongoing
5.4. Subject Matter Expert(s) (non-voting) <ul style="list-style-type: none"> • Faculty Learning Strategist • Librarian, Engineering and Computer Science Library • Technology Specialist, Faculty 	1 1 1	Ongoing Ongoing Ongoing
5.5. Recording Secretary (non-voting)	1	Ongoing

6. Duties

6.1. Policy Duties

- The committee is responsible for creating and/or advising on and reviewing policy related to matters under its domain.
- The Chair or the Vice-Dean, Undergraduate shall be the official Faculty representative, where such is requested, on any University or Extra-University Committee, the scope of which falls within the terms of reference.
- The Committee shall represent the Faculty of Applied Science and Engineering in matters concerned with teaching resources at the University level, such as the Centre for Teaching Support and Innovation (CTSI) and the University of Toronto Library.

- The Committee shall provide input to the design of course teaching evaluations and monitor their use and administration.

6.2. Recurring Duties (Routine, Administrative)

- Administer all Faculty Teaching Awards.

6.3. Reporting and Coordinating Duties

- Report the decision on Faculty Teaching Awards to the FASE Director, Awards and Honours.
- Interact as needed on teaching methods and awards issues with appropriate committees and offices of this and other Faculties and the Governing Council.
- Report actions and recommendations of the Committee according to the rules of procedure established and from time to time amended by Council as set out in the *Procedures for Committees of Council*.

7. Rules and Procedures Differing from the Procedures for Committees of Council

N/A

8. Appendices

N/A

9. For further information:

For policy and information items submitted to Faculty Council, see the Faculty Council [webpage](#). For other items produced by the Committee regarding operations, etc., contact the committee's Recording Secretary.



UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Manual for the
Teaching Methods and Resources Committee
A Standing Committee of Faculty Council

Approved by the Council of the Faculty of Applied
Science & Engineering: February 1, 1999
Last Revision approved: ~~December 6, 2022~~ **February 27, 2023**

Manual for the Teaching Methods and Resources Committee

Preamble

Each Standing Committee [of Faculty Council](#) is required to have a manual, approved by [the Speaker of Faculty Council](#) [and posted on the Faculty Council webpage](#), which provides detail particular to the committee. The purpose of the manual is to promote clarity and consistency in committee responsibilities and operations.

Each Standing Committee ~~of Council~~ and the Academic Appeals Board ([Undergraduate](#)) are to be operated within the guidelines provided by the [Procedures for ~~Standing Committees of Council~~](#). [These procedures provide information on the committee responsibilities, membership structure, chair and vice-chair, and meeting operating procedures.](#)

1. Name of Committee

Teaching Methods and Resources Committee ([TMRC](#))

2. Terms of Reference

On behalf of Faculty Council, each Standing Committee, being comprised of representative of stakeholders within the domain of the committee and supported by subject matter experts and administrative staff, is responsible, with respect to their domain, to:

1. Provide a forum for the full range of stakeholder voices to discuss present practice and new proposals;
2. Pursue best practice: investigate, study, report on and promote;
3. Review, periodically, policies and procedures;
4. Recommend, as appropriate, changes to policy and procedures;
5. Carry out specific, defined duties; and
6. Report regularly to Council on its activities and intentions.

3. Term of Office

[July 1 of each academic year until June 30 of that academic year.](#)

~~3.4.~~ Domain

With respect to undergraduate and graduate classroom/course instruction, the Teaching Methods and Resources Committee is responsible for the domain including:

- a) Teaching methods, resources, and aids; and
- b) [Setting guidelines for the evaluation of teaching effectiveness and rewarding teaching effectiveness via the Faculty Teaching Awards](#)~~Evaluating and rewarding teaching effectiveness.~~

~~4.5.~~ Membership

The membership of the Teaching Methods and Resources Committee consists of:

Constituent Group	Number of Reps	Length of Term
5.1. Teaching Staff <ul style="list-style-type: none"> • Chemical Engineering & Applied Chemistry • Civil & Mineral Engineering • Electrical & Computer Engineering • Engineering Science • Institute for Aerospace Studies • Institute for Studies in Transdisciplinary Engineering Education & Practice • Institute of Biomedical Engineering • Materials Science & Engineering • Mechanical & Industrial Engineering 	9 (One from each Academic Unit)	3 years
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5.4. Subject Matter Expert(s) (non-voting) <ul style="list-style-type: none"> • Faculty Learning Strategist • Librarian, Engineering and Computer Science Library • Technology Specialist, Faculty 	1 1 1	Ongoing Ongoing Ongoing
5.5. Recording Secretary (non-voting)	1	Ongoing

5.6. Duties

6.1. Policy Duties

- The committee is responsible for creating and/or advising on and reviewing policy related to matters under its domain.
- The Chair or the Vice-Dean, Undergraduate shall be the official Faculty representative, where such is requested, on any University or Extra-University Committee, the scope of which falls within the terms of reference.
- The Committee shall represent the Faculty of Applied Science and Engineering in matters concerned with teaching resources at the University level, such as the Centre for Teaching Support and Innovation (CTSI) and the University of Toronto Library.
- The Committee shall provide input to the design of course teaching evaluations and monitor their use and administration.

6.2. Recurring Duties (Routine, Administrative)

- Administer all Faculty Teaching Awards.
- ~~Prepare nominations for teaching awards administered outside of the Faculty.~~

6.3. Reporting and Coordinating Duties

- Report the decision on Faculty Teaching Awards to [the FASE Director, Awards and Honours Council](#).
- Interact as needed on teaching methods and awards issues with appropriate committees and offices of this and other Faculties and the Governing Council.
- Report actions and recommendations of the Committee according to the rules of procedure established and from time to time amended by Council as set out in the *Procedures for Committees of Council* ~~of the Faculty of Applied Science and Engineering~~.

~~7. 6.~~ Rules and Procedures Differing from the Procedures for Committees of Council ~~(if applicable)~~ N/A

~~6.8.~~ Appendices

N/A

~~7.9.~~ For further information:

For policy and information items submitted to Faculty Council, see the Faculty Council [webpage site](#). For other items produced by the Committee regarding operations, etc., contact the committee's Recording Secretary.