

MIE523H1 F

ENG. PSYCHOLOGY & HUMAN PERFOR

Fall 2024 Syllabus

Course Meetings

MIE523H1 F

Section	Day & Time	Delivery Mode & Location
LEC0101	Monday, 4:00 PM - 6:00 PM	In Person: BA 2185
	Thursday, 4:00 PM - 5:00 PM	In Person: HA 410
PRA0101	Monday, 9:00 AM - 12:00 PM	In Person: RS 303

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Course Website: <https://q.utoronto.ca/courses/363659>

Instructor: Dr. Anthony Soung Yee

Email: anthony.soungyee@utoronto.ca

Office Hours and Location: By appointment only

Teaching Assistant: Deenar Amir Virani

Email: deenar.virani@mail.utoronto.ca

Teaching Assistant: Amin Azad

Email: amin.azadarmaki@mail.utoronto.ca

Course Overview

An examination of the relation between behavioural science and the design of human-machine systems, with special attention to advanced control room design. Human limitations on perception, attention, memory and decision making, and the design of displays and intelligent machines to supplement them. The human operator in process control and the supervisory control of automated and robotic systems. Laboratory exercises to introduce techniques of evaluating human performance.

Course Learning Outcomes

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

- Apply principles of human information processing to the design of human-machine systems and interfaces

- Design and execute lab experiments involving human subjects to model human behaviour

Prerequisites: MIE231H1/MIE236H1/ECE286H1 or equivalent required; MIE237H1 or equivalent recommended

Credit Value: 0.5

Graduate Attributes:

- 1A. Knowledge Base for Engineering: Demonstrate competence in mathematics and modeling. [Introduced]
- 1B. Knowledge Base for Engineering: Demonstrate competence in natural sciences. [Applied]
- 1C. Knowledge Base for Engineering: Demonstrate competence in specialized engineering knowledge appropriate to the program. [Applied]
- 2A. Problem Analysis: Demonstrate the ability to identify and characterize an engineering problem. [Applied]
- 2B. Problem Analysis: Demonstrate the ability to formulate a solution plan (methodology) for an engineering problem. [Applied]
- 2C. Problem Analysis: Demonstrate the ability to formulate and interpret a model. [Applied]
- 2D. Problem Analysis: Demonstrate the ability to execute a solution process for an engineering problem. [Developed]
- 3A. Investigation: Demonstrate the ability to define a problem. [Applied]
- 3B. Investigation: Demonstrate the ability to devise and execute a plan to solve a problem. [Applied]
- 3C. Investigation: Demonstrate the ability to use critical analysis to reach valid conclusions supported by the results of the plan. [Applied]
- 4A. Design: Demonstrate ability to frame a complex, open-ended problem in engineering term. [Introduced]
- 4B. Design: Demonstrate ability to generate a diverse set of candidate engineering design solutions. [Introduced]
- 4C. Design: Demonstrate ability to select candidate engineering design solutions for further development. [Introduced]
- 4D. Design: Demonstrate ability to advance an engineering design to a defined end state. [Introduced]
- 6A. Individual and Team Work: Demonstrate ability to establish and monitor team organizational structure. [Introduced]
- 6B. Individual and Team Work: Demonstrate ability to promote team effectiveness through individual action. [Introduced]
- 6C. Individual and Team Work: Demonstrate success in a team based project. [Introduced]
- 7A. Communication Skills: Demonstrate the ability to identify and credibly communicate engineering knowledge. [Applied]
- 7B. Communication Skills: Demonstrate the ability to use different modes of communication. [Applied]
- 7C. Communication Skills: Demonstrate the ability to develop communication through an iterative process. [Introduced]

Course Materials

Recommended Textbook

Engineering Psychology and Human Performance – 5th edition, by *Christopher D. Wickens, William S. Helton Justin G. Hollands, Simon Banbury*

(The 4th edition is also acceptable.)

Software

Matlab - Available in the ECF labs, as well as [here](#).

Marking Scheme

Assessment	Percent	Details	Due Date
Midterm Exam	30%		No Specific Date
Lab Experiments	30%	There are 5 lab experiments, worth a total of 30% of the course grade.	No Specific Date
Final Exam	40%		Final Exam Period

Late Assessment Submissions Policy

10% per day of lateness.

Policies & Statements

University Land Acknowledgement

I wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Learn more about Canada's relationship with Indigenous Peoples [here](#).

Indigenous Students' Supports

If you are an Indigenous engineering student, you are invited to join a private Discord channel to meet other Indigenous students, professors, and staff, chat about scholarships, awards, work opportunities, Indigenous-related events, and receive mentorship. Email [Professor Bazylak](#) or [Darlee Gerrard](#) if you are interested.

Indigenous students at U of T are also invited to visit First Nations House's (FNH) Indigenous

Student Services for culturally relevant programs and services. If you want more information on how to apply for Indigenous specific funding opportunities, cultural programs, traditional medicines, academic support, monthly social events or receive the weekly newsletter, go to the FNH [website](#), [email](#) or follow FNH on social media: [Facebook](#), [Instagram](#), or [TikTok](#). A full event calendar is on the CLNX platform. Check CLNX often to see what new events are added!

Wellness and Mental Health Support

As a university student, you may experience a range of health and/or mental health challenges that could result in significant barriers to achieving your personal and academic goals. The University of Toronto and the Faculty of Applied Science & Engineering offer a wide range of free and confidential services that could assist you during these times.

As a U of T Engineering student, you have a Departmental [Undergraduate Advisor](#) or a Departmental [Graduate Administrator](#) who can support you by advising on personal matters that impact your academics. Other resources that you may find helpful are listed on the [U of T Engineering Mental Health & Wellness webpage](#), and a small selection are also included here:

- [U of T Engineering's Mental Health Programs Officer](#)
- [Accessibility Services](#) & the [On-Location Advisor](#)
- [Health & Wellness](#) and the [On-Location Health & Wellness Engineering Counsellor](#)
- [Graduate Engineering Council of Students' Mental Wellness Commission](#)
- [SKULE Mental Wellness](#)
- [U of T Engineering's Learning Strategist](#) and [Academic Success](#)
- [Registrar's Office](#) and [Scholarships & Financial Aid Office & Advisor](#)

We encourage you to access these resources as soon as you feel you need support; no issue is too small.

If you find yourself feeling distressed and in need of more immediate support, consider reaching out to the counsellors at [U of T Telus Health Student Support](#) or visiting U of T Engineering's [Urgent Support – Talk to Someone Right Now](#).

Accommodations

The University of Toronto supports accommodations for students with diverse learning needs, which may be associated with mental health conditions, learning disabilities, autism spectrum, ADHD, mobility impairments, functional/fine motor impairments, concussion or head injury, visual impairments, chronic health conditions, addictions, D/deaf, deafened or hard of hearing, communication disorders and/or temporary disabilities, such as fractures and severe sprains, or recovery from an operation.

If you have a learning need requiring an accommodation the University of Toronto recommends that students [register with Accessibility Services](#) as soon as possible.

We know that many students may be hesitant to reach out to Accessibility Services for accommodations. The purpose of academic accommodations is to support students in

accessing their academics by helping to remove unfair disadvantages. We can assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. The process of accommodation is private; we will not share details of your needs or condition with any instructor.

If you feel hesitant to register with us, we encourage you to reach out for further information and resources on how we can support. It may feel difficult to ask for help, but it can make all the difference during your time here.

Phone: 416-978-8060

Email: accessibility.services@utoronto.ca

Equity, Diversity and Inclusion

Looking for community? Feeling isolated? Not being understood or heard?

You are not alone. You can talk to anyone in the Faculty that you feel comfortable approaching, anytime – professors, instructors, teaching assistants, [first-year](#) or [upper years](#) academic advisors, student leaders or the [Assistant Dean of Diversity, Inclusion and Professionalism](#).

You belong here. In this class, the participation and perspectives of everyone is invited and encouraged. The broad range of identities and the intersections of those identities are valued and create an inclusive team environment that will help you achieve academic success. You can read the evidence for this approach [here](#).

You have rights. The [University Code of Student Conduct](#) and the [Ontario Human Rights Code](#) protect you against all forms of harassment or discrimination, including but not limited to acts of racism, sexism, Islamophobia, antisemitism, homophobia, transphobia, ableism, classism and ageism. Engineering denounces unprofessionalism or intolerance in language, actions or interactions, in person or online, on- or off-campus. Engineering takes these concerns extremely seriously and you can confidentially disclose directly to the Assistant Dean for help [here](#).

Resource List:

- [Engineering Equity, Diversity & Inclusion Groups, Initiatives & Student Resources](#)
- [Engineering Positive Space Resources](#)
- Request a religious-based accommodation [here](#)
- Email Marisa Sterling, P.Eng, the Assistant Dean, Diversity, Inclusion & Professionalism [here](#)
- Make a confidential disclosure of harassment, discrimination or unprofessionalism [here](#) or email engineering@utoronto.ca or call 416.946.3986
- Email the Engineering Society Equity & Inclusivity Director [here](#)
- [U of T Equity Offices & First Nations House Resources](#)

Plagiarism Detection Tool

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).

Academic Integrity

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts.

Plagiarism—representing someone else's work as your own or submitting work that you have previously submitted for marks in another class or program—is a serious offence that can result in sanctions. Speak to me or your TA for advice on anything that you find unclear. To learn more about how to cite and use source material appropriately and for other writing support, see the [U of T writing support website](#). Consult the [Code of Behaviour on Academic Matters](#) for a complete outline of the University's policy and expectations. For more information, please see the [U of T Academic Integrity website](#).

Quercus Information

This course uses the University's learning management system, Quercus, to post information about the course. This includes posting readings and other materials required to complete class activities and course assignments, as well as sharing important announcements and updates. The site is dynamic and new information and resources will be posted regularly as we move through the term, so please make it a habit to log in to the site on a regular, even daily, basis. To access the course website, go to the U of T Quercus log-in page at <https://q.utoronto.ca>. Once you have logged in to Quercus using your UTORid and password, you should see the link or "card" for this course. You may need to scroll through other cards to find this. Click on this link to open our course area, view the latest announcements and access your course resources. There are Quercus help guides for students that you can access by clicking on the "?" icon in the left side column.

SPECIAL NOTE ABOUT GRADES POSTED ONLINE: Please also note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point in the term, until they have been formally approved and posted on ACORN at the end of the course. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.