GE1361: DIGITAL LITERACY: NEW TECHNOLOGIES, SOCIETY, AND YOU

Effective Term
Semester A 2024/25

Part I Course Overview

Course Title
Digital Literacy: New Technologies, Society, and You

Subject Code
GE - Gateway Education
Course Number
1361

Academic Unit
Computer Science (CS)

College/School
College of Computing (CC)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

GE Area (Primary)
Area 3 - Science and Technology

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course will critically examine new digital technologies from various perspectives, enabling students to acquire digital literacy to become responsible citizens in the new digital era. The course will cover digital skill sets, innovative technologies, and digital ethics, focusing on artificial intelligence, data privacy and security. The list of topics include Generative AI (AI chat bots and image generators), blockchain technologies, personal cybersecurity, and social media platforms. For each topic, students will learn about how the technology works, its benefits, and where it is used in the real-world, while also inquiring about the ethical, legal, financial, and environmental challenges brought by the new technology. Through this course, students will appreciate the benefits, privileges and responsibilities associated with new digital technologies, while also developing insights about the proper and improper usage of new technologies and its effect on society and themselves.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Demonstrate conceptual knowledge about how new digital technologies work.		x		
2	Critically evaluate new technologies in personal life and learning.		x	x	
3	Critically evaluate new technologies from societal, economic, and financial perspectives.		x	x	
4	Develop agency as a responsible digital citizen.			x	

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	The class time will alternate between 2 lecture weeks and 1 group discussion week. In lecture, students will engage in materials on new digital technologies. Explanations of the new technology will focus at the conceptual level, and the intuition behind how the technology works and its limitations. Toy examples and real demos will further illustrate the technology. The real-world applications of the technology will be discussed.	1	3 hrs. lecture/tutorial per week
2	Discussion	In the discussion week, students will cultivate critical thinking by discussing the issues of the technology in small groups. Each group will select from a set of questions, case studies, or hypothetical situations, and inquire about the issues from various perspectives. At the end of the class time, groups will consolidate their views and report to the class through a presentation.	2, 3	
3	Tutorial Exercises	Students will do tutorial exercises to try the technology and to further develop conceptual and intuitive knowledge about it.	1	
4	Quizzes	Students will demonstrate conceptual understanding of the technology and its various issues in 3 in-class quizzes (the top 2 scores will be kept).	1, 2, 3	

5	Group Project	Students will independently investigate their own case-study of an innovative usage of new technology, and investigate its issues from various perspectives, including personal and societal. Groups will present their projects in a poster session. Each group can have at most 4 students.	2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Group discussion	2, 3	15	
2	Tutorial exercises	1	15	
3	Quizzes	1, 2, 3	50	
4	Group Project	2, 3, 4	20	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task

1. Group discussion

Criterion

1.1 ABILITY to INQUIRE and EVALUATE about benefits and challenges of new technologies.
1.2 ABILITY to CRITIQUE and give constructive feedback on students' presentations

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

2. Tutorial exercises

Criterion

2.1 ABILITY to EXPLAIN new digital technologies.
2.2 ABILITY to INTERPRET and ANALYZE artifacts produced by new digital technologies.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

3. Quizzes

Criterion

3.1 ABILITY to IDENTIFY and EXPLAIN new technologies.
3.2 ABILITY to ANALYZE and EVALUATE benefits and issues with new technologies.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

4. Group Project

Criterion

4.1 ABILITY to INTERPRET and ANALYZE artifacts produced by new digital technologies.
4.2 ABILITY to ANALYZE and EVALUATE benefits and issues with new technologies.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

As the landscape of digital technologies is ever-changing, the course will be updated to include new technologies when they become available. A current list of topics include:

· Generative AI, including chatbots (e.g., ChatGPT) and image generators (e.g., DALL-E2)
· Ethical, privacy, and legal issues of generative AI
· Blockchain technologies
· Financial and economical issues of blockchain technologies
· Personal cybersecurity
· Social media platforms and personal security
· Ethical and legal issues of social media (e.g., misinformation)
· Environmental issues of new technologies

As much as possible, each topic will be taught by an expert in that particular subfield of Computer Science.

To make the course more engaging, online teaching materials for tutorials are provided for students to gain hands-on experience with the digital technologies, in order to see its strengths and weaknesses, and to gain insights about its potential issues. For example, one activity might be to generate DeepFake images of ridiculous situations to try to fool other students. Students may then consider how the ease of such technology creates ethical and legal dilemmas, as well as strategies to identify such cases.

Reading List

Compulsory Readings

	Title
1	Digital Citizenship Toolkit (https://pressbooks.library.torontomu.ca/digcit/)
2	Various articles from the New York Times, MIT Technology Review, Science and Engineering Ethics, and other sources.

Additional Readings

	Title
1	Nil

Annex (for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

PILO 1: Demonstrate the capacity for self-directed learning

4

PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology

1

PILO 3: Demonstrate critical thinking skills

2, 3

PILO 4: Interpret information and numerical data

1

PILO 5: Produce structured, well-organised and fluent text

2, 3

PILO 6: Demonstrate effective oral communication skills

2, 3

PILO 7: Demonstrate an ability to work effectively in a team

2, 3

PILO 9: Value ethical and socially responsible actions

2, 3, 4

PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation

1, 2, 3, 4

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task

Quizzes