Title (Units): **ITEC1007 Getting Started with Artificial Intelligence (3,2,1)**

Course Aims:

1. Introduce various topics in Artificial Intelligence (A.I.) and the basic principles behind.
2. Introduce the latest A.I. technologies, applications, and tools.
3. Raise students' concerns over the impacts that A.I. brings to the society, e.g. job opportunities, ethics.
4. Provide hands-on opportunities for students to experience/design/create smart applications with A.I.

Prerequisite: Nil

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Describe key concepts in different areas of Artificial Intelligence (A.I.) and related issues.
2	Describe the latest A.I. technologies, applications, and tools.
	Professional Skill
3	Create smart applications with A.I.
4	Design A.I. solutions for solving daily life problems or addressing daily needs.

Calendar Description: After completion of this course, students will have an overview and fundamental understanding about Artificial Intelligence (A.I.). Students will be alerted to the impact and some related issues aroused by the use and development of A.I. technologies. Students will also have some hands-on opportunities to experience/design/create smart applications with A.I.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-2	Students will learn the concepts, trends and issues in different areas of A.I. via lectures.
3	Students will acquire hands-on experience via laboratory sections.
4	Students are guided to do problem-solving via design workshops.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Lab Exercises & Assignments	40%	3-4	Lab exercises and assignments are designed to measure how well students can make use of AI tools for different types of applications.
2	Short Quizzes	30%	1-2	Quizzes are designed to assess students' understanding on AI related concepts.
3	Group Project	30%	1-4	Apply their knowledge to design/create smart application with AI

Assessment Rubrics:

Level of Achievement	Elaboration on Course Grading Description
Excellent (A)	• Demonstrate excellent understanding over most of the key concepts, technologies/applications and related issues in Artificial Intelligence. • Able to apply suitable A.I. concepts to design/create excellent solutions, with high level of creativity, for solving daily life problems.

Good (B)	• Demonstrate good understanding over most of the key concepts, technologies/applications and related issues in Artificial Intelligence. • Able to apply suitable A.I. concepts to design/create good solutions, with some creativity, for solving daily life problems.
Average (C)	• Demonstrate good understanding over some of the key concepts, technologies/applications and related issues in Artificial Intelligence. • Able to apply suitable A.I. concepts to design/create standard solutions for solving daily life problems.
Satisfactory (D)	• Demonstrate satisfactory understanding over some of the key concepts, technologies/applications and related issues in Artificial Intelligence. • Able to relate suitable A.I. concepts to some daily life problems.
Unsatisfactory (F)	• Unable to demonstrate satisfactory understanding over the key concepts, technologies/applications and related issues in Artificial Intelligence. • Unable to relate suitable A.I. concepts to daily life problems.

Course Content and CILOs Mapping:

Content		**CILO No.**
I	Basic concepts in A.I. technologies, applications and ethnic issues	1 - 2
II	Hands-on experience in various topics of A.I.	3 - 4

References:

- Stuart Russell, Artificial Intelligence: A Modern Approach, Pearson, 4th edition, 2020.
- Wolfgang Ertel, Introduction to Artificial Intelligence, Springer, 2018.
- Jerry Kaplan, Artificial Intelligence: What Everyone Needs to Know, Oxford University Press, 2016.
- Amir Husain, The Sentient Machine: The Coming Age of Artificial Intelligence, Scribner, 2017.
- Prateek Joshi, Artificial Intelligence with Python: A Comprehensive Guide to Building Intelligent Apps for Python Beginners and Developers, Packt Publishing, 2017.

Course Content:

Topic

I. Basic concepts in A.I. technologies, applications and ethnic issues
   1. Artificial Intelligence vs. Human Intelligence
   2. Human-like machines (Intelligent Agent and Robotics)
   3. How a computer can talk to human? (A.I. Chatbots and Natural Language Processing)
   4. A.I. with human expertise (Knowledge Representation and Reasoning)
   5. A.I. game playing (Search Algorithms)
   6. How a computer can learn to be smarter? (Machine Learning and Artificial Neural Networks)
   7. Our Future with A.I.

II. Hands-on experience in various topics of A.I.
   1. Robotics simulation
   2. Building chatbot
   3. Machine Learning experiment
   4. Computer vision experiment