هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification

(Bachelor)

Course Title:	Introduction to Artificial Intelligence Applications
Course Code:	CSC 1251
Program:	Bachelor in Computer Science
Department:	Computer Science
College:	Computers and Information Technology
Institution:	University of Tabuk
Version:	1.0
Last Revision Date:	27 July 2022

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3 hours)					
2. Course type					
A.	☒ University	☐College	☐ Department	☐Track	☐Others
B.	☐ Required		☒ Elective		
3. Level/year at which this course is offered: (Level 2/ Year 1)					
4. Course general Description:					
Artificial Intelligence is considered one of the branches of computer science and a fundamental pillar of the technology industry in the current era. It is the ability of machines and computers to perform tasks that are repetitive or similar to those performed by humans and other intelligent creatures, such as the ability to analyze, think, learn from previous experiences, or perform other cognitive processes. This course provides the fundamentals of Artificial Intelligence to students from various disciplines to increase their awareness of Artificial Intelligence and its potential for use in real life.					
5. Pre-requirements for this course (if any)**:**					
Introduction to Computing - CSC1101					
6. Co-requisites for this course (if any)**:**					
N/A					
7. Course Main Objective(s):					

- **Demonstrate a fundamental understanding of the foundations of Artificial Intelligence.**
- **Understand the uses of Artificial Intelligence and its applications in society.**
- **Understand the applications of Artificial Intelligence and its applications in devices.**
- **Demonstrate the ability to participate in discussions about the current scope and limitations of Artificial Intelligence applications.**

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning	-	-

No	Mode of Instruction	Contact Hours	Percentage
3	Hybrid • Traditional classroom • E-learning	-	-
4	Distance learning	-	-

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	-
3.	**Field**	-
4.	**Tutorial**	-
5.	**Others (specify)**	-
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	**Understand the role of data, algorithms, and hardware in Artificial Intelligence.**	K2	• **Lectures**	• **Exams** • **Class works** • **Assignments**
1.2	**Learn about the various uses of Artificial Intelligence in society.**	K1	• **Lectures**	• **Exams** • **Class works** • **Assignments**
1.3	**Understand the importance of data analysis in Artificial Intelligence.**	K2,K3,K4	• **Lectures**	• **Exams** • **Class works** • **Assignments**
1.4	**Explain the techniques of machine learning and deep learning.**	K2,K3,K4	• **Lectures**	• **Exams** • **Class works** • **Assignments**

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.5	Familiarize yourself with the mechanisms of applying hardware in Artificial Intelligence.	K2,K3,K4	• Lectures	• Exams • Class works • Assignments
1.6	Understand the scope, limitations, and future of Artificial Intelligence.	K2,K3,K4	• Lectures	• Exams • Class works • Assignments
2.0	**Skills**			
2.1	Analyzing real-world Artificial Intelligence problems that can be beneficial for end users.	S2	• Class discussions • Case study	• Exams • Class works • Assignments • Project
3.0	**Values, autonomy, and responsibility**			
3.1	The ability to work in teams to develop teamwork and discussion skills.	V2	• Class discussions	• Class works
3.2	Understanding the ethical use of intelligent applications.	V2	• Case study	• Presentations

C. Course Content

No	List of Topics	Contact Hours
1.	Introducing AI: Data, Algorithms and Hardware	3
2.	Uses of AI in Society: Computer Applications and Automation (Part1): Introducing Common Application Types	3
3.	Uses of AI in Society: Computer Applications and Automation (Part2): Seeing How AI Makes Applications Friendlier	3
4.	Uses of AI in Society: Medical Needs and Human Interaction (Part 1): Implementing Portable Patient Monitoring-Making Humans More Capable.	3
5.	Uses of AI in Society: Medical Needs and Human Interaction (Part 2): Devising New Surgical Techniques- Performing Tasks Using Automation	3
6.	Uses of AI in Society: Medical Needs and Human Interaction (Part 3): Combining Robots and Medical Professionals	3

7.	Uses of AI in Society: Medical Needs and Human Interaction (Part 4): Developing New Ways to Communicate Using Multimedia	3
8.	Machine Learning in AI (Part 1): Defining Data Analysis Defining Machine Learning	3
9.	Machine Learning in AI (Part 2): Considering How to Learn from Data	3
10.	Improving AI with Deep Learning (Part 1): Shaping Neural Networks Similar to the Human Brain Mimicking the Learning Brain	3
11.	Improving AI with Deep Learning (Part 2): Introducing Deep Learning	3
12.	Working with AI in Hardware Applications: Robots, Drones and AI-Driven Cars (Part 1): Defining Robot Roles Assembling a Basic Robot Acknowledging the State of the Art Defining Uses for Drones	3
13.	Working with AI in Hardware Applications: Robots, Drones and AI-Driven Cars (Part 2): Understanding the Future of Mobility	3
14.	Working with AI in Hardware Applications: Robots, Drones and AI-Driven Cars (Part 3): Getting into a Self-Driving Car	3
15.	Future of AI: Nonstarter Application, AI in Space and New Human Occupations	3
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Class Works *(Class Activities)*	1 – 13	10%
2.	Assignments	4,10	10%
3.	Project	13	20%
4.	Mid-Term Exam	9	20%
5.	Final Exam	16	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	**Artificial Intelligence For Dummies,2ed, John Paul Mueller, Luca Massaron, Willy, 2022, ISBN-10:1119796768 ISBN-13 : 978-1119796763**
Supportive References	**Artificial Intelligence: A Modern Approach, 4/E. By Stuart Russell & Peter Norvig, Prentice Hall, 2020, ISBN-13: 978-0134610993, ISBN-10: 0134610997** **Artificial Intelligence: Structures and Strategies for Complex Problem Solving, 6th Edition, George Luger, Pearson, 2008, ISBN-10: 0321545893, ISBN-13:978-0321545893**
Electronic Materials	**Saudi Digital Library (SDL) (www.sdl.edu.sa)**
Other Learning Materials	**N/A**

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	**Classroom (25 seats)**
Technology equipment (projector, smart board, software)	**White board, Data show projector**
Other equipment (depending on the nature of the specialty)	**N/A**

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of Teaching	Faculty, Program Leaders, and Advisory Board	Both Direct and Indirect
	Students	Indirect
Effectiveness of Students Assessment	Faculty, Program Leaders, Advisory Board, and Independent Opinion	Both Direct and Indirect
Quality of Learning Resources	Faculty, Students, and Advisory Board	Indirect
The Extent to which CLOs have been Achieved	Faculty, Program Leaders, Advisory Board, and Independent Opinion	Direct (as in section B) and Indirect/Surveys
	Students	Indirect
Other	-	-

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	