


AMOU UNIVERSITY
“A Vehicle for Peace and Development”
AMOU UNIVERSITY



FACULTY OF COMPUTING AND ICT

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY PROGRAMME

ACADEMIC YEAR 2015/ 2016

COURSE DESCRIPTION

BIT 425	Artificial Intelligence
Contact Hours	39
Pre-requisite	BIT 317 Discrete Mathematics
Purpose/Aim	The main aim of this course is to provide an introductory understanding of the multidisciplinary field of Artificial Intelligence. The course will cover basic ideas and techniques underlying the design of intelligent computer systems.
Course Objective (Indicative Learning Outcomes)	<ul style="list-style-type: none"> • To give an overview of the main issues in Artificial Intelligence • To define the main sub-disciplines of Artificial Intelligence • To describe the key ideas and concepts of each sub-discipline of Artificial Intelligence • To appreciate symbolic systems, their processing and application
Course Content	<ul style="list-style-type: none"> • Introduction: Definition of artificial Intelligence • Problems, problem spaces and search: Solving Problems by Searching, Beyond Classical Search, Adversarial Search, Constraint Satisfaction Problems • Knowledge and Reasoning : Logical Agents, First-Order Logic, Inference in First-Order Logic, Classical Planning, Planning and Acting in the Real World, Knowledge Representation • Uncertain Knowledge and Reasoning: Quantifying Uncertainty, Probabilistic Reasoning, Probabilistic Reasoning over Time, Making Simple Decisions, Making Complex Decisions • Learning: Learning from Examples, Knowledge in Learning, Learning



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	Probabilistic Models, Reinforcement Learning <ul style="list-style-type: none"> • Introduction to knowledge based and experimental systems • Intelligent agents and distributed artificial intelligence • Introduction to game playing • Introduction to planning • Introduction to robotics • Introduction to natural language understanding and speech recognition • Introduction to expert systems • Introduction to learning and adaptive systems • Introduction to vision 		
Learning & Teaching Methodologies	Lectures, tutorials and computer laboratory exercises		
Instructional Materials/Equipment	Classroom with audio visual aids Computer laboratory Java language and development environment		
Course Assessment	Type		Weighting (%)
	Final Examination		60
	Mid Term Examination		20
	Assignment		10
	Attendance		10
	Total		100
Recommended Reading	Title	Author	Publisher
	Artificial Intelligence: A Modern Approach (3 rd Edition)	Stuart Russel and Peter Norvig	Prentice Hall (2009)
	Artificial Intelligence: Theory and Practice	Thomas Dean, James Allen and Yiannis Aloimonos	Addison Wesley (2002)
	Artificial Intelligence (3 rd Edition)	Winston, Patrick H.	Addison Wesley (1992)
Additional Reading	Artificial Intelligence an Engineering Approach	Schalkof F, Robert	McGraw Hill (1990)
	Mobile Robots: inspiration to Implementation	Joseph L. Jones and Anita M. Flynn	A K Peters (1998)
Other Support Material	A variety of multimedia systems and electronic information resources as prescribed by the lecturer. Various application manuals and articles, URL search and journals.		