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| المملكة العربية السعودية  وزارة التعليم العالي  **جامعة أم القرى**  الكلية الجامعية بالجموم – قسم الحاسب الآلي |  | Kingdom of Saudi Arabia  Ministry of Higher Education  **Umm Al-Qura University**  University College in Al-Jamoum  Computer Dept. |

Course Specification

1. **Course number and name:** (2316432-3) Artificial Intelligence
2. **Credits and contact hours:** 3 Credits (Lecture: 3/week, Practical Session: −)
3. **Instructor’s or course coordinator’s name:** Dr. Majid Al-Maraashi
4. **Text books**
5. **Main Text book:** Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, Prentice Hall, Third Edition, 2010.
6. **Reference:** David Poole and Alan Mackworth, Artificial Intelligence: Foundations of Computational Agents, Cambridge University Press, 2010.
7. **Specific course information**
8. **brief description of the content of the course (Catalog Description):**

This course introduces the basic concepts of Artificial Intelligence (AI) through covering a broad spectrum of AI concepts and methods, and apply them to solve AI problems.

1. **prerequisites or co-requisites:** Computer Theory (2316415-3)
2. **indicate whether a required, elective, or selected elective course in the program:** required
3. **Specific goals for the course**

The student will be able to:

1. Identify the type of an AI problem such as search, inference, decision making under uncertainty, game theory, etc.
2. Implement, evaluate and compare the performance of various AI algorithms.
3. Compare the difficulty of different versions of AI problems, in terms of computational complexity and the efficiency of existing algorithms.

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| *Course*  *Goals* | *Program Outcomes* | | | | | | | | | | |
| SOa | SOb | SOc | SOd | SOe | SOf | SOg | SOh | SOi | SOj | SOk |
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| **Relationship of Course Goals to the Program Student Outcomes** | |
| **SOc** | An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.   * *Students are required design and implement a software project to meet a specification.* |
| **SOj** | An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.   * *Students are required to apply their knowledge of computing to design a solution to a problem and to document the solution including the tradeoffs involved in their design choices.* |

1. **Brief list of topics to be covered**

* Introduction
* Intelligent Agents
* Solving Problems by Searching
* Logical Agents
* Planning
* Knowledge Representation
* Intelligent Systems
* Machine Learning