

1.	Course title	Artificial Intelligence
2.	Course number	1902342
3.	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4.	Prerequisites/corequisites	
5.	Program title	Computer Information Systems
6.	Year of study and semester (s)	2016/2017 - Second Semester
7.	Final Qualification	
8.	Other department (s) involved in teaching the course	
9.	Language of Instruction	English
10.	Date of production/revision	20/01/2019
11.	Required/ Elective	Required

12. Course Coordinator: Prof. Nadim Obeid

Office numbers, office hours, phone numbers, and email addresses should be listed.

Office number: 207
office hours: 12:00-1:00 Sun., Tues., Thur.
phone number: 22617
email addresses: obein@ju.edu.jo

13. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

14. Course Description:

As stated in the approved study plan.

Introduction to artificial intelligence (concepts, research areas and applications), Propositional logic, First order logic, Representing simple domains in First order logic, Resolution refutation proofs; Logic programming (Prolog), Exhaustive search methods; Heuristic search methods; Production systems; Architecture of expert systems.

15. Course aims and outcomes:

A- Aims:

The aim of the course is to enable students to solve problems using explicit knowledge and reasoning. Students will be able (1) to express knowledge of a simple domain in propositional and/or first order predicate calculus, (2) design a solution to simple problems where AI techniques can be employed and (3) write simple programs in Prolog that reason about the available knowledge to achieve their goals. Furthermore, student will have the ability to decide and use some appropriate search techniques (blind or heuristic) for some problems.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to:

OA-Knowledge and Understanding (students should)

- (OA1) have some understanding of propositional calculus, first order predicate logic and other Knowledge representation techniques
- (OA2) have some understanding of Prolog
- (OA3) have some understanding of the basic architecture of expert systems.
- (OA4) have some understanding of some blind and heuristic search techniques.

OB-Intellectual skills-with ability to

- (OB1) Appreciate the subtleties related to different approaches to AI
- (OB2) Appreciate the subtleties related to different AI techniques.
- (OB3) Decide the suitability of AI techniques for a problem/domain.
- (OB4) Analyze and design a solution to a problem where AI techniques can be employed.

OC- Practical Skills-With ability to

- (OC1) Implement a solution to a simple problem where AI techniques can be employed.
- (OC2) Write simple AI programs in PROLOG.
- (OC3) Express knowledge of a domain in a suitable knowledge representation formalism.

OD-Transferable Skills-With ability to

- (OD1) Deploy communication skills.
- (OD2) Work effectively within a group to analyse, design and implement a KBS.
- (OD3) To work to tight deadlines
- (OD4) effectively present the final work in a demo.

16. Topic Outline and Schedule:

Topic	Week	ILOs	Program SOs	ABET SOs	Instructor	TLA (teaching, learning and Assessment)
- Welcome and Orientation - Introduction to artificial intelligence	1 and 2	OB1, OB2, OB3	1, 2, 4	a	Nadim Obeid	Luger's book Chapter 1 + Available Notes Homeworks, Discussion, Exams

(concepts, research areas and applications) - Local and Global impact of AI.						
- Propositional calculus and first order predicate logic. - Translation between logic and natural language texts	3-6	OA1, OC1, OC3	5	a	Nadim Obeid	Luger's book + Available Notes Homeworks, Discussion, Exams
Programming in Prolog	7-9	OA2, OC1, OC2, OC3	5, 8	c	Nadim Obeid	Luger's book + Available Notes Homeworks, Discussion, Exams
Blind and heuristic search techniques	10-12	OA4, OB1, OB2, OB3, OB4	1, 5, 8	c	Nadim Obeid	Luger's book + Available Notes Homeworks, Discussion, Exams
Production Systems	13	OA1, OB1, OB2, OC3	1, 5, 8	c	Nadim Obeid	Luger's book + Available Notes Homeworks, Discussion, Exams
architecture of Expert systems	14	OB1, OB2, OB3, OB4	1, 5, 8	c	Nadim Obeid	Luger's book + Available Notes Homeworks, Discussion, Exams
Rule-based vs Model based reasoning	15	OB1, OB2, OB3, OB4	1, 5, 8	a	Nadim Obeid	Luger's book + Available Notes Homeworks, Discussion, Exams

(Please mention instructors per topic if the course topics are being taught by more than one instructor)

17. Evaluation Methods and Course Requirements (Optional):

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Homeworks, discussions, presentations, quiz, exams

18. Course Policies:

A- Attendance policies:

University Regulations

B- Absences from exams and handing in assignments on time:

University Regulations

C- Health and safety procedures:

University Regulations

D- Honesty policy regarding cheating, plagiarism, misbehavior:

University Regulations

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

Mid term exam 30%

Homeworks and quiz: 10%

Programming or research Project: 10%

Final exam: 50%

F- Available university services that support achievement in the course:

Computer laboratories, data shows and whiteboards (e-learning system)

G- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

19. Required equipment:

Computer laboratory, data show and white board (e-learning system)

20. References:

A- Required book (s), assigned reading and audio-visuals:

Luger G., Artificial Intelligence, The Benjajmin/Cummings Publishing Company, 6th Edition, 2008.

B- Recommended books, materials, and media:

1. Rich E. and Kevin K., Artificial Intelligence, McGraw Hill, 1991.
2. Cawsey A., The Essence of Artificial Intelligence, Prentice Hall, 1997.
3. Jones M. T., AI Application Programming, 2nd edition, Charles River Media, 2005

21. Additional information:

1. Supplementary notes are made available of the e-learning (Moodle) system.
2. Students are encouraged to make use of JU library, E-LIBRARY:
access within the university: <http://e-library>
access from outside: <http://ezlibrary.ju.edu.jo/login>

Some important/relevant journals include:

- (1) Artificial Intelligence
- (2) Applied Intelligence
- (3) AI Review

Date: 9/9/2018

Name of Course Coordinator: **Prof. Nadim Obeid** Signature: -----

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File