

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

**Course Specifications
(CS)**

Course Specifications

Institution:- Najran University	Date of Report
College/Department :	
College of Science and Arts Sharoura/ Department of Computer Science	

A. Course Identification and General Information

1. Course title and Code Title: Introduction to Artificial Intelligence Code: 714CS-3 (٧١٤ع-٣)			
2. Credit hours : 3 hours			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) The computer science program			
4. Name of faculty member responsible for the course Dr. Ibrahim Mohammed Alwayli			
5. Level/year at which this course is offered: 7 th level / 4 th year			
6. Pre-requisites for this course (if any) 404 CS-3 (Data Structures)			
7. Co-requisites for this course (if any)			
8. Location if not on main campus Male and Female Branches			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100%"/>
b. Blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="text"/>

B Objectives

1. What is the main purpose for this course? After completion of this course the student must be able to :- 1) Collect theoretical bases of the AI. 2) Identify problems, their fields, methods of acquiring knowledge and suggest the Optimum solutions for these problems. 3) Continue self-learning in the fields of AI (theory or application).
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) The inclusion of research that was carried out by members of the faculty in the field of AI. Modify some parts, especially due to the Applied consistent with the development in this field. Using WWW to find the new and modern in the world of artificial intelligence.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

This course will cover: Introduction to Artificial Intelligence, Problem-solving, Knowledge Engineering- acquisition of knowledge, Knowledge representation, Inference Engine, Search techniques, Expert Systems, Languages for Artificial Intelligence (Prolog), patterns recognition and image processing, and other AI applications (selection of one): Speech recognition, and Neural Networks.

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact Hours
Introduction to Artificial Intelligence	1	3
Problem-solving	1	3
Knowledge Engineering- acquisition of knowledge	1	3
Knowledge representation	2	6
Inference Engine	1	3
Search techniques	1.5	5
Expert Systems	1	3
Languages for Artificial Intelligence – Prolog	1.5	4
Artificial Intelligence Applications – patterns recognition and image processing	1.5	5
An optional application for AI (this semester Speech Recognition)	1	3
Another optional application for AI (this semester Neural Networks)	1.5	4
General Review	1	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	45	-	-	-	-	45
Credit	45	-	-	-	-	45

3. Additional private study/learning hours expected for students per week.	<input type="text"/>
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Memorize principles and fundamental knowledge and applications in the field of AI.	Lecture	Written Exam
1.2	Classify research methods and knowledge representation according to the applied areas.	Lecture	Written Exam
1.3	Recall the necessary information for using intelligent system	Lecture	Written Exam
1.4	Compare between methods of acquisition and representation of knowledge.	Lecture	Written Exam
2.0	Cognitive Skills		
2.1	Estimate the method of representation and appropriate research to solve a problem in the field of artificial intelligence.	Problem Solving	Written Exam Projects
2.2	Create intelligent programs using artificial intelligence languages.	Problem Solving	Written Exam Projects
3.0	Interpersonal Skills & Responsibility		
3.1			
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Use fountain mathematics to understand and solve the problems of neural networks.	Lecture Problem Solving	Written Exam Projects
4.2	use graph theory and algebra to build a model Grammar on natural language processing	Lecture Problem Solving	Written Exam Projects
4.3	Apply statistical methods dealing with uncertainty knowledge in the smart systems.	Lecture Problem Solving	Written Exam Projects
5.0	Psychomotor		
5.1	None		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise

Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider Maximize Continue Review Ensure Enlarge Understand
Maintain Reflect Examine Strengthen Explore Encourage Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm Exam	8	20
2	Quizzes	During the semester	10
3	Assignments	During the semester	10
4	Final Exam	At the end of semester	50
5	Attendance	During the semester	10

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office Hours.

E. Learning Resources

1. List Required Textbooks

1- George F Luger “**Artificial Intelligence-Structures and Strategies for Complex Problem Solving**”, Pearson Education Limited, 2005.

2- مجموعة كتب دلتا – ١٩٩٥, "الحاسب و الذكاء الاصطناعي", فهمي طلبة و اخرين

2. List Essential References Materials (Journals, Reports, etc.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

Stuart J. Russell and Peter Norvig “**Artificial Intelligence, A Modern Approach**”, Pearson Education, Inc 2011.

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in Classrooms with 30 seats

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

2. Computing resources (AV, data show, Smart Board, software, etc.)

Every class room has data show

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching: ✓ Distribution of a questionnaire for students to know how to achieve the goals in the theoretical and practical side.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor: ✓ Discussions with colleagues who specialize in teaching methods and means of learning. ✓ Self-evaluation of the performance of the teacher. ✓ Discussions with other colleagues who taught this course.
3 Processes for Improvement of Teaching ✓ Diagnose weaknesses and turn them into strengths. ✓ Discussions about the decision and methods of teaching ✓ Study the needs of the labor market of college graduates
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Faculty or Teaching Staff: Dr. Ibrahim Mohammed Alwayli

Signature: _____ **Date Report Completed:** _____

Received by: _____ **Dean/Department Head**

Signature: _____ **Date:** _____