



Course Specification

— (Postgraduate)

Course Title: Selected Topics in Robotics

Course Code: 503883 -3

Program: Master in Artificial Intelligence

Department: Computer Science

College: Computers and Information Technology

Institution: Taif University

Version: V2

Last Revision Date: 5 May 2024

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Computer Science Department

جامعة الطائف
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Table of Contents

A. General information about the course:.....	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:.....	4
C. Course Content:.....	4
D. Students Assessment Activities:.....	4
E. Learning Resources and Facilities:	5
F. Assessment of Course Quality:.....	5
G. Specification Approval Data:.....	6



A. General information about the course:

1. Course Identification:

1. Credit hours: (3)			
2. Course type			
A.	<input type="checkbox"/> University	<input type="checkbox"/> College	<input checked="" type="checkbox"/> Department <input type="checkbox"/> Track
B.	<input type="checkbox"/> Required		<input checked="" type="checkbox"/> Elective
3. Level/year at which this course is offered: (Year: 1, Level: 1)			
4. Course general Description:			
The course introduces robotics to students by offering the new trend on the Robotics field in relation to homogeneous and coordinates transformations, locomotion, and manipulation, Forward and inverse kinematics, path and trajectory planning, sensors and actuators, and robot programming and control.			
5. Pre-requirements for this course (if any):			
None.			
6. Co-requirements for this course (if any):			
None.			
7. Course Main Objective(s):			
The purpose of this course is to introduce students to advanced topics on robotics. This course will build on the prior knowledge of a previous introduction to robotics course.			

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	36	80%
2	E-learning	9	20%
3	Hybrid <ul style="list-style-type: none"> ▪ Traditional classroom ▪ E-learning 	0	0%
4	Distance learning	0	0%

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): Mid-Term and Final Exams	-





Total	45
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B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe and distinguish between different types of Robotics, and robot control methods.	K1	Lecture, Brainstorming, Discussion	Direct: Quiz, Exam Indirect: Survey
2.0	Skills			
2.1	Implement new research papers in Robotics.	S2	Lecture, Problem Solving	Direct: Exam, Quiz, Assignment Indirect: Survey
2.2	Utilize resources and build a new model field.	S2	Lecture, Project, Problem Solving	Direct: Exam, Quiz, Assignment Indirect: Survey
3.0	Values, autonomy, and responsibility			
3.1	Function effectively as a member or leader of a team engaged in activities appropriate to the field of robotics.	V2	Discussion, Problem Solving	Direct: Project, Presentation Indirect: Survey

C. Course Content:

No	List of Topics	Contact Hours
1.	All topics will be left up to the Prof. based on the trend at that time.	45
Total		45

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	5 th , 10 th weeks	10%
2.	Lab	Weekly	20%
3.	Mid-term exam	8 th week	25%
5.	Term-project & presentation	14 th week	30%





No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
6.	Final Exam	16 th Week	30%

*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	<ul style="list-style-type: none"> There is no required textbooks. Based on trend and research papers in the robotics field.
Supportive References	<ul style="list-style-type: none"> -
Electronic Materials	<ul style="list-style-type: none"> -
Other Learning Materials	<ul style="list-style-type: none"> Links provided by the instructor. Handouts and Presentations Slides prepared by the instructor. Blackboard.

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ul style="list-style-type: none"> Classroom (20 students/class) Computer labs
Technology equipment (Projector, smart board, software)	<ul style="list-style-type: none"> Video projector / data show White board
Other equipment (Depending on the nature of the specialty)	<ul style="list-style-type: none"> Mobile robots (at least 4 kits) Arm Robots (at least 4 kits)

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students Coordinator	Indirect (Course exit survey) Indirect (Feedback from Course Coordinator)
Effectiveness of students assessment	Faculty member Coordinator	Indirect (Feedback from Faculty member) Indirect (Feedback from Course Coordinator)
Quality of learning resources	Students Faculty member Coordinator Council Curriculum Committees	Indirect (Course exit survey) Indirect (Feedback from Faculty member) Indirect (Feedback from Course Coordinator) Indirect (Feedback from council) Indirect (Feedback from Graduate Committees)



Assessment Areas/Issues	Assessor	Assessment Methods
The extent to which CLOs have been achieved	Students Faculty member Coordinator Curriculum Committees	Indirect (Course exit survey) Indirect (Feedback from Faculty member/ Course Coordinator/ Graduate Committee)
Other	-	-

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	GRADUATE PROGRAMS COMMITTEE – CS DEPT.	
REFERENCE NO.	V2	
DATE	5/5/2024	

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