Course Description Form

1. Course Name:
Robotics

2. Course Code:

3. Semester / Year:
1st Semester

4. Description Preparation Date:
25/3/2024

5. Available Attendance Forms:
Presence

6. Number of Credit Hours (Total) / Number of Units (Total)
2/45

7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Dr. Firas Abdulrazzaq Raheem Email: firas.a.raheem@uotechnology.edu.iq

8. Course Objectives

Course Objectives	**To enable BSc students to understand, derive and solve different mathematical topics that deals with Industrial Robot Manipulator motion: Forward and inverse kinematics, trajectory planning, Robot features, Differential Motions and Velocities, dynamics and robot programming.**

9. Teaching and Learning Strategies

Strategy	• **Lectures**. • **Tutorial**. • **Quizzes**.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-2	3		General Introduction to Industrial Robot	Lecture_ tutorial	quiz
3-4	3		Essential Mathematics	Lecture_ tutorial	quiz
5-7	3		Robot Kinematics	Lecture_ tutorial	quiz
8-10	3		Trajectory Planning	Lecture_ tutorial	quiz
11	3		Differential Motions and Velocities	Lecture_ tutorial	quiz
12	3		Robot Dynamics	Lecture_ tutorial	quiz
13	3		Robot Features	Lecture_ tutorial	quiz
14	3		Robot Programming	Lecture_ tutorial	quiz
15	3		Artificial Intelligence and Robotics	Lecture_ tutorial	quiz

11. Course Evaluation

20% documented exam
5% Quizzes
5% reports and homework

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	[1] Spong M. W., Hutchinson S., and M. Vidyasagar , "Robot Modeling and Control", John Wiley & Sons, 2006. [2] Craig J. J., "Introduction to Robotics: Mechanics and Control", Prentice Hall , 2005. [3] S. B. Niku, "Introduction to Robotics Analysis, Systems and Applications", Prentice Hall, New Jersey, 2011. [4] Peter Corke, "Robotics, Vision and Control: Fundamental Algorithms in Matlab", Springer International Publishing AG, 2nd Edition, 2017.
Main references (sources)	
Recommended books and references (scientific journals, reports…)	

Electronic References, Websites	