

University of Salahaddin

College of Science

Department of Computer science

# Course Book

For

## Intelligent Machine and Robotics

4th year in computer science

Study Year :2015/2016

Assistant Lecturer: Sajida Hadi B.

Email :[sj.hadi@gmail.com](mailto:sj.hadi@gmail.com)

## **Objective:**

The subject consists of a series of lectures on robot fundamentals and case studies on practical robot systems. The objective of the course is to provide students with the essential skills necessary to be able to develop robotic systems for practical applications.

At the end the students will: be familiar with sensor technologies relevant to robotic systems; understand conventions used in robot kinematics and dynamics; understand the dynamics of mobile robotic systems and how they are modeled; understand the practical application of robotic systems in applications.

This Course content will include: history and philosophy of robotics; hardware components and subsystems; robot kinematics and dynamics; sensors, measurements and perception; robotic architectures, robot planning; robot learning and robot vision.

## **References:**

- 1- Fundamentals of Robotics Mechanical Systems, Jorge Angeles, 2003
- 2- Robotics and Automation Handbook, Thomas R. Kurfess, 2005
- 3- Robot Mechanisms and Mechanical devices, Paul E. Sandin, 2003.
- 4- Robotics for beginner ,by: Er. Tejinder devgon
- 5- Introduction to AI Robotics, Robin R. Murphy, 2000.

## **Grading:**

1<sup>st</sup> semester theory exam 15%

2nd semester theory exam 15%

Research related to subject 7%

Daily evaluation	3%
<hr/>	
	40%

Final exam	60%
------------	-----

**Forms of Teaching:** The course consists of three hours of theoretical lectures .

Lectures will explain the basic concepts associated with the course by using the Data show and white board.