2017   1

Course Title	( )		( )	Robotics

( ) Lecturer	( )		/ / (Course No. /)	006486/ /3
(/HP) Contact No.			/ (Class Hour/Venue)	Mon/Wed 10:30-12:00, 106
(Course Prerequisite)	Dynamics		(Target Student)	Mechanical Engineering Senior
E-mail (E-mail Address)			/Office Hour (Office/Office Hour)	1114, Mon/Wed 15:00 - 16:30

(Objectives)	Basic theory of robotics enginering will be covered in this course. To obtain in-depth understandig of robots extending its applications in industries and daily life throuth the lectures on the coordinate setup, coordinate transformation, kinematcs, robot dynamics, robot mechanism, robot control, robot acuators and sensors
CQI (Continuous Quality Improvement Plan)	
(Text book & References)	Main text: Students may pick either one of the following two text books for their main text. Seungbin moon, kyungchul Ko, kwan-Woong Gwak, "Intelligent robotics", SciTech MEdia OR John J. Craig, Introduction to Robotics, Mechanics and Control (3rd edition), Wiley. Reference : 1.Mark W. Spong, Seth Hutchinson, M. Vidyasagar, "Robot Modeling and Control", John Wiley & Sons, 2006. 2. Saeed B. Niku, Introduction to Robotics: Analysis, Systems, Applications (2), Prentice Hall. 3. , :Matlab Simulink ,
(Assignment book)	Seungbin moon, kyungchul Ko, kwan-Woong Gwak, "Intelligent robotics", SciTech MEdia John J. Craig, Introduction to Robotics, Mechanics and Control (3rd edition), Wiley.
(Lecture Methods)	Lecture notes in ppt format will be used via projector
(Assignment)	homework problems with which main topics would be understood and reinforeced will be given. homeworks are due in one week after given
(Reading Materials)	
(Course Grading)	[ ] (%) : 40, (%) : 20, (%) : 10, (%) : 10, Term Project : 20, midterm exam(40 %), final exam(25 %), Term project (15%), homework(10 %), attendance(10 %)
(Etc.)	

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(Week)	(Course Contents)	(Etc.)	
1	Introduction to robotics	Blackboard & projector	
2	Course overview	Blackboard & projector	
3	Position and Orientation, Rotation matrix Homogeneous Transformation, Inverse Transformation	Blackboard & projector	
4	Composition of Transformation, Transform equation, Successive Coordinate Transformation Euler anlge, Roll-Pitch-Yaw	Blackboard & projector	
5	Coordinate setup and link parmaeter Forward kinematics	Blackboard & projector	
6	Inverse kinematics velocity kinematics: jacobian	Blackboard & projector	
7	velocity kinematics: jacobian	Blackboard & projector	
8	Midterm exam		

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(Week)	(Course Contents)	(Etc.)	
9	Maipulator Statics	Blackboard & projector	
10	Maipulator Dynamics	Blackboard & projector	
11	Maipulator Dynamics	Blackboard & projector	
12	path planning	Blackboard & projector	
13	Maipulator control	Blackboard & projector	
14	Actuators & Sensors	Blackboard & projector	
15	Term Project presentation	Blackboard & projector	
16	Final Exam		

	( ) , , Students who require special assistance (including special needs students) may contact their professors during the first week of the semester to discuss issues related to attendance, lectures, assignments and exams and request learning assistance.
1 (Additional Guide1)	
2 (Additional Guide2)	
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