



MODULE HANDBOOK DESCRIPTION

Module designation	Robotic	
Code	FBB4114	
Semester(s) in which the module is taught	7 / fourth year	
Person responsible for the module	I Made Budi Suksmadana, S.T., M.T	
Language	Indonesian	
Relation to curriculum	Compulsory for Electronics	
Teaching methods	Lecture, small group discussion, case base method.	
Workload (incl. contact hours, self-study hours)	<p>Contact minutes every week, each week of the 16 weeks/semester :</p> <ul style="list-style-type: none"> • Lectures: 2 x 50 minutes • Exercises and Assignments: 2 x 60 minutes • Private study: 2 x 60 minutes. <p>Total study hours = 5 hours 40 minutes/week</p>	
Credit points	2 (~ 3,2 ECTS)	
Required and recommended prerequisites for joining the module	<ul style="list-style-type: none"> - Logic Circuit (FBS1107) - Control System (FBS3139) - Microprocessor System (FBS2235) 	
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> 1. Students are able to explain Robots and Their Applications 2. Students are able to explain Sensors for robot 3. Students are able to explain Robot Reactive Behaviour 4. Students are able to explain Robotic Motion and Odometry 5. Students are able to explain Local Navigation: Obstacle Avoidance 6. Students are able to explain Mapping 7. Students are able to explain Mapping-Based Navigation 	PLO3 and PLO4
	<ol style="list-style-type: none"> 8. Students are able to design and test wall/line follower robots 	PLO4 and PLO5

Content	Introduction to Robotic, Robots and Their Applications, Sensors, Robot Reactive Behavior, Robotic Motion and Odometry, Local Navigation, Obstacle Avoidance, Mapping and Mapping-Based Navigation
Examination forms	<ul style="list-style-type: none"> - Multiple choice examination, - Project présentation.
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ul style="list-style-type: none"> a. Midterm exam = 25% b. Final exams = 25% c. Project = 50% <p>Students must have a final grade of 65% or higher to pass</p>
Reading list	<ol style="list-style-type: none"> 1. Mordechai Ben, Ari Francesco Mondada, Elements of Robotics, 2018. 2. Dan B. Marghitu, Mechanisms and Robots Analysis with MATLAB, 2009.