



MODULE HANDBOOK DESCRIPTION

Module designation	Optoelectronics	
Code	FBB0003	
Semester(s) in which the module is taught	6/third year	
Person responsible for the module	I Made Budi Suksmadana, S.T., M.T.,	
Language	Indonesian/English	
Relation to curriculum	Elective for Electronics Engineering	
Teaching methods	lectures, small group discussion, case base method.	
Workload (incl. contact hours, self-study hours)	Contact minutes every week, each week of the 16 weeks/semester: <input type="checkbox"/> Lectures: 2 x 50 minutes <input type="checkbox"/> Exercises and Assignments: 2 x 60 minutes <input type="checkbox"/> Self-study: 2 x 60 minutes. Total study hours = 5 hours 40 minutes/week.	
Credit points	2 SKS (~ 3.2 ECTS)	
Required and recommended prerequisites for joining the module	- FBS1211 Physics II - FBS2125 Basic Electronics - FBS2235 Microprocessor System	
Module objectives/ intended learning outcomes	1. Students are able to analyse Optoelectronic Sensors Technologies and Application Areas	PLO3
	2. Students are able to design students Fiber Optic Sensors in Structural Health Monitoring and Electro-optic Gyroscopes systems	PLO4
	3. Students are able to continue to improve their knowledge about the development of optoelectronics and its use in the present and in the future	PLO9

Content	<p>This lecture discusses a comprehensive overview of the technologies and applications of optoelectronic sensors. Based on the R&D experience of more than 70 engineers and scientists, highly representative of the academic and industrial community in this area, and provides a broad and accurate description of the state-of-the-art optoelectronic technologies for sensing. The most innovative approaches, such as the use of photonic crystals, squeezed states of light and microresonators for sensing, are considered. Application areas range from environment to medicine and healthcare, from aeronautics, space, and defence to food and agriculture.</p>
Examination forms	<ul style="list-style-type: none"> - Written case study - Midterm and final test
Study and examination requirements	<p>The final grade in the module is composed of:</p> <ul style="list-style-type: none"> a. Attendance: 5% b. Case assessment: 3 x 15% = 25% c. Midterm assessment: 35% d. Final assessment: 35% <p>Students must have a final grade of 65% or higher to pass</p>
Reading list	<ol style="list-style-type: none"> 1. G. C. Righini, A. Tajani, A. Cutolo, and U. of S. Ital, AN INTRODUCTION TO OPTOELECTRONIC SENSORS. World Scientific Publishing Co. Pte. Ltd. 5 Toh Tuck Link, Singapore 596224, 2009 2. J. Wilson and J. Hawkes, Optoelectronics An Introduction. Prentice Hall, 1998.