

MODULE HANDBOOK

Course:	Optical Laser
Module Level:	Undergraduate
Code:	FIO303
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	3 rd / Third Year
Module Coordinator:	Prof. Dr. Moh. Yasin
Lecturer(s):	Prof. Dr. Moh. Yasin and Drs. Pujiyanto, M.S.
Language:	Bahasa Indonesia
Classification within the Curriculum	Compulsory Course / Elective Course
Teaching format / class hours per week during semester:	3 hours of lectures (50 min / hour)
Workload:	3 hours of lectures, 3 hours of tutorial and structured activities, 3 hours of individual activities, 13 weeks per semester, and total of 117 hours per semester ~ 3,9 ECTS*
Credit Points:	3
Requirement(s):	(FIO301) Modern Optics
Learning Goals/Competencies:	<p>General Competence (Knowledge): To understand principle of laser and apply to a wider instrumentation.</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. Demonstrate overview of laser 2. Demonstrate optical resonator 3. Demonstrate Gaussian beam optics 4. Demonstrate stimulated and optical gain 5. Able to calculate optical amplifiers 6. Demonstrate laser oscillation 7. Demonstrate CW and Pulsed lasers
Contents:	Overview of laser, optical resonators, Gaussian beam optics, stimulated emission and optical gain, optical amplifiers, laser oscillation, CW lasers, and Pulsed lasers.
Soft Skill Attribute:	Active and good communication
Study/Exam Achievements:	<p>Students are considered competent and eligible to pass the course upon obtaining at least 40 of maximum score for the exams (midterm and final exam), structured activity (group discussion). Type of test is essay test and presentation.</p> <p>Final score is calculated as follow: 20% assignment + 20% quizzes + 30% midterm test + 30% final exam</p> <p>Final grade is defined as follow: A : 75 - 100</p>

	AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99
Forms of Media:	Powerpoint slides, LCD projectors and whiteboards
Learning Methods:	Lecture, assessments and group discussion
Literature(s):	1. Richard S. Quimby, "Photonics and Lasers: An Introduction", John Wiley & Sons, Inc.
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.