

Course	:	Fibre and Laser Physics
Module Level	:	Undergraduate
Code	:	FIO 201
Sub-heading, if applicable:	:	-
Courses included in the module, if applicable:	:	-
Semester/Term	:	6 th / Third Year
Module Coordinator(s):	:	Samian, S.Si.
Lecturer(s):	:	Samian, S.Si., Supadi, S.Si., M.Si.
Classification within the Curriculum	:	Compulsory Course / Elective Course
Workload	:	3 hours of lectures, 3 hours of structural activities, 3 hours of individual study, 14 weeks per semester, and total 117 hours per semester-3.9 ECTS*
Credit Points	:	3
Requirement(s)	:	Mathematical Physics II, Physic of Wave
Learning Outcome	:	<p>LO 1 : They have knowledge of classical physics and modern physics to solve relevant problems.</p> <p>LO 2 : They have the ability to apply mathematical methods to solve problems in physics.</p> <p>LO 3 : They have solved the problem with applied the concept and principal of physics for theoretical analysis, modeling and simulation.</p>
Learning Goals/Competences	:	<p>General Competence (Skill): Students are able to:</p> <ol style="list-style-type: none"> Understand principle of fiber optics Understand principle of CW and pulsed lasers <p>Specific Competence: Students are able to:</p> <ol style="list-style-type: none"> Understand propagation of light, losses, dispersion in fiber optics Understand splicing and couplers Understand light source and detectors Understand lasers and coherent light Understand optical amplifiers Understand and develop of CW and pulsed lasers
Contents	:	Optics fiber and light, Propagation of light along the fiber, Losses in optic fibers, Dispersion , Splicing, Couplers, Light source and detectors, Lasers and coherent light, Optical resonators, Gaussian beam optics, Optical amplifiers, Laser oscillation, CW laser characteristics, Pulsed laser, Application of fiber & laser

Soft Skill Attribute	:	Dicipline, persistence
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 test and final exam), structured activity (group discussion).</p> <p>Final score is calculated as follow: 20% assignment 1 + 20%assignment 2 + 30% midterm + 30% final exam</p> <p>Final grade is defined as follow: A : 75 – 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99</p>
Forms of Media	:	Powerpoint slides, LCD projectors and whiteboards
Learning Methods	:	Lecture, assessments and group discussion
Referensi	:	<ol style="list-style-type: none"> 1. John Crisp and Barry Elliot, Introduction to Fiber Optics, 2005 2. Richard S Quimby, Photonics and Lasers: An Introduction, John and Wiley & Sons, Inc., 2006.
Notes	:	<p>*Total ECTS = {(total hours workload x 5 0 min)/60 min}/25 hours</p> <p>Each ECTS is equals with 25 hours</p>