MODULE HANDBOOK

Course:	**Fiber Optics**
Module Level:	Undergraduate
Code:	FIO302
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	5th / Third Year
Module Coordinator:	Samian, S.Si., M.Si.
Lecturer(s):	Samian, S.Si., M.Si. and Supadi, S.Si., M.Si
Language:	Bahasa Indonesia
Classification within the Curriculum	~~Compulsory Course~~ / Elective Course
Teaching format / class hours per week during semester:	2 hours of lectures (50 min / hour)
Workload:	2 hours of lectures, 2 hours of structural activities, 2 hours of individual study, 13 weeks per semester, and total of 78 hours per
Credit Points:	2
Requirement(s):	(FIO 301) Modern Optics
Learning Goals/Competencies:	**General Competences (Knowledge):** The students are able to explain the characteristic and range of optical fibers, mechanism and function as passive devices, and understand the principle of a simple optical fiber communication networks and its devices. **Specific Competences:** 1. Students are able to explain the mechanism of light guiding in optical fibers and specification of optical fiber based on the type of refractive index profile 2. Students are able to explain the materials and optical fiber manufacture, mechanical properties and structure as cable 3. Students are able to explain the wave equation, wave mode, and the energy in the single mode optical fiber with step index types 4. Students are able to explain the occurrence of signal degradation, its causes and how to compensate 5. Students are able to calculate the attenuation of the optical fiber, coupling loss of light from the source to the optical fiber, and a loss in the optical fiber splicing. 6. Students are able to explain the mechanism, characteristics and function of fiber Bragg grating, fiber coupler and fiber interferometer. 7. Students are able to explain the principles of LED generation and laser light on the semiconductor laser and light modulator. 8. Students are able to explain the working principle and simple network of optical communication systems and devices that are used.
Contents:	The basic principle of guiding light in optical fibers, Materials and Fabrication of Fiber Optics, Theory Mode For Cylindrical Wave guides, Signal Degradation In Fiber Optics, Fiber Optics For Devices Passive and Optical Fiber Communication Systems
Soft Skill Attribute:	Active and good communication

Study/Exam Achievements:	Students are considered competent and eligible to pass the course upon obtaining at least 55 of maximum score for midterm test, final exam, quizzes and home work. Final score is calculated as follow: 35% midterm test) + 35% final exam + 30% structure activity (home work). 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
Forms of Media:	Powerpoint slides, LCD projectors and whiteboards
Learning Methods:	Lecture, assessment and group discussion
Literature(s):	1. Keiser, G., 1984, *Optical Fiber Communication*, Mc Graw Hill, New York. 2. Agrawal, G. P., 2004, *Lightwave Technology Componen and Device*, John Willey & Sons, New York. 3. Suematzu,Y., Iga, K., 1982, *Introduction to Optical Fiber Communication*, John Willey & Sons, New York.
Notes:	*Total ECTS={(total hours workloadx50 min)/60 min}/25 hours Each ECTS is equals with 25 hours