MODULE HANDBOOK

Course:	**Modern Optics**
Module Level:	Undergraduate
Code:	FIO301
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/Term:	2nd / Second Year
Module Coordinator(s):	Dr. Moh. Yasin
Lecturer(s):	Prof. Dr. Retna Apsari 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 structural activities, 3 hours of individual study, 13 weeks per semester, and total of 117 hours per semester 3.9 ECTS*
Credit Points:	3
Requirement(s):	(FID103) Basic Physics II and (FIT201) Mathematical Physics
Learning Goals/Competencies :	**General Competence (Knowledge):** Describe mathematical description of optical phenomena and its applications. **Specific Competence:** 1. Demonstrate of the phenomena of light propagation in the vacuum & medium 2. Demonstrate reflection & refraction of light 3. Demonstrate diffraction & Gaussian beam 4. Demonstrate interference & coherence of light 5. Demonstrate dispersion of light & holography 6. Demonstrate an introduction to biophotonics 7. Demonstrate an optical imaging, fourier analysis & optical modulation 8. Demonstrate an introduction to nonlinear optics 9. Discussion trending topics in modern optics.
Contents:	Principe of electromagnetic waves, reflection & refraction, diffraction & Gaussian beam, interference & coherence, dispersion, holography, introduction to biophotonics, optical imaging, Fourier analysis, optical modulation, introduction to nonlinear optics and trending topics.
Soft Skill Attribute:	Effort and ethic
Study/Exam Achievements:	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). Type of test is essay test and presentation. Final score is calculated as follow: 2 0 % assignment + 20% Quizzes + 30% midterm test + 30% final exam 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, assessments and group discussion
Literature(s):	1. Guenther R. D., 1991, *Modern Optics*, Wiley-VCH. 2. Schnars dan Jueptner, 2005, *Digital Holography*, Springer-Jerman 3. Vo Dinh, 2003, *Biomedical Photonics Handbook*, CRC Press, New York
Notes:	*Total ECTS = {(total hours workload × 50 min) / 25 hours Each ECTS is equals with 25 hours.