Module Handbook

Courses	Optics
Programme	Undergraduate Program (S-1)/Bachelor
Code	
Semester	5
Group of Course Coordinator	Dr. Titin Sunarti.,M.Si
Lecturers	1. Dr. Titin Sunarti., M.Si. 2. Dr. Asnawi, S,Si.,M.Si.
The language used	Indonesian
Classification in the curriculum	Compulsory Courses
Learning format / number of class hours per week	Per-week consists of: 2 hours face to face (1 hour face to face = 50 minutes)
Load	2 hours face to face, 2 hours structured assignments,2 learn to be independent per-week, for 15 weeks = a total of 90 hours face-to-face / semester
Credit Unit	2 CU = 3.18 ECTS
Precondition	Basic Physics 1, Basic Physics 2 and Modern Physics
Course Learning Outcome	1. Students are able to apply physical optical systems to Huygens principles and equations 2. Students are able to apply the basic concepts of physical optics to interference (wavefront splitting interferometer and amplitude splitting). 3. Students are able to apply physical optics to various diffraction systems (Fresnell, Frounthoufer, single slit and diffraction grating). 4. Students are able to apply the polarization system to the optical system 5. Students are able to apply a geometric optical system on the Fermat principle of reflection and refraction 6. Students are able to apply geometric optical concepts to optical devices 7. Students are able to apply light propagation systems in medium and between mediums
Courses content	In this courses, various optical systems are discussed fissionally and geometrically, where physical optics will discuss: Huygens principle, interference (wavefront splitting interferometer, amplitude splitter), diffraction (Fresnell, Frounthoufer, single slit and diffraction lattice), polarization and geometric optics discusses Fermat's principle of reflection and refraction, optical tools and the propagation of light in the medium and between mediums
Attributed soft skill	scientific report public speaking team work

<table>
<tr><td>Learning achievement (assesment)</td><td>Students are considered competent and pass if they get at least a minimum test score of 68 for mid test (SS) and final exam (S) , assignment (A), and participation (P), where the final grade (FG) is calculated following the formula:
Final Grade of the course (FG)= 20% P + 30% A + 20% SS + 30% S

Convert the 0-100 scale value to a 0-4 scale and the letters are arranged as follows:
<table>
<tr><th>Letters</th><th>Number</th><th>Interval</th></tr>
<tr><td>A</td><td>4,00</td><td>85 ≤ A < 100</td></tr>
<tr><td>A-</td><td>3,75</td><td>80 ≤ A- < 85</td></tr>
<tr><td>B+</td><td>3,50</td><td>75 ≤ B+ < 80</td></tr>
<tr><td>B</td><td>3,00</td><td>70 ≤ B < 75</td></tr>
<tr><td>B-</td><td>2,75</td><td>65 ≤ B- < 70</td></tr>
<tr><td>C+</td><td>2,50</td><td>60 ≤ C+ < 65</td></tr>
<tr><td>C</td><td>2,00</td><td>55 ≤ C < 60</td></tr>
<tr><td>D</td><td>1,00</td><td>40 ≤ D < 55</td></tr>
<tr><td>E</td><td>0,00</td><td>0 ≤ E < 40</td></tr>
</table></td></tr>
<tr><td>Media form</td><td>1. Power point file
2. e-book file</td></tr>
<tr><td>References</td><td>

1. Hecht, Eugene, Optics, 4thed. Addison Wesley. Addelphi University, 2002.
2. Pedrotti, S.L., Introduction to Optics, Edisi Kedua, Prentice HallInc., New Jersey, 1993.
3. Gerd Keesser , “Optical Fiber Comunication” *McGraw-Hill*, 4 th edition, 2011.
4. Jenkins, F. A, and H. E. White, Fundamentals of Optics, McGraw-Hill, Kogakusha, Ltd., 4th edition, 1976.
5. Halliday, D dan Resnick, R., 2014,Fundamental of Physics, Edisi Kesepuluh,John Wiley & SonsInc., Kanada
6. F. J. Bueche and D. A. Jerde, Principles of Physics, McGraw-Hill, 6th edition, New York, 1995.
7. D. C. Giancoli, Physics, Principles with Applications, 4th edition, Prentice Hall International, Inc., Englewood, New Jersey, 1995
8. A collection of articles from various international journals with coverage in the field of optical science and the relevant ones, which have novelty aspects in the field of optical technology

</td></tr>
<tr><td>Note</td><td></td></tr>
</table>