**Bachelor of Education in Science           MODULE HANDBOOK**

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| Module designation | Wave and Optics |
| Module level, if applicable | Undergraduate |
| Code, if applicable | PIPAUM6205 |
| Subtitle, if applicable | - |
| Courses, if applicable | *-* |
| Semester(s) in which the module is taught | Even/Autumn Term |
| Person responsible for the module | Yessi Affriyenni, S.Pd, M.Sc |
| Lecturer | Yessi Affriyenni, S.Pd, M.ScProf. Dr. Arif Hidayat, M.SiDra. Chusnana Insjaf Yogihati, M.Si |
| Language | Bahasa Indonesia |
| Relation to curriculum | Compulsory, 4th semester. |
| Type of teaching, contact hours | Guided-Inquiry, Presentation, Direct Instruction: 3 x 50 = 150 minutes. Laboratory Work: 1 x 170 = 170 minutes |
| Workload | 1. Class Activities: 3 x 50 = 150 minutes (2.5 hours) per week.
2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week.
3. Private study: 3 x 60 = 180 minutes (3 hours) per week.
4. Laboratory Work: 1 x 170 minutes = 170 minutes (2.83 hours) per week.
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| Credit points | 4 credit points (~6.35 ECTS cr-eq) |
| Requirements according to the examination regulations | Minimum of attendance is 80% for a semester |
| Recommended prerequisites | PIPAUM6202 – Basic Physics II |
| Module objectives/intended learning outcomes | After completing this module, students are expected to:**LO 2 –** Demonstrate knowledge of basic physics and earth science |
| Content | This course covers the following three main topics: 1) Mechanics Wave, 2) Optics, and 3) Electromagnetic Wave |
| Study and examination requirements and forms of examination | Assignment, Quiz, Midterm, Final Examination, Oral Test, Performance |
| Media employed | Slide Show, Video, White Board, Moodle (SIPEJAR), and Laboratory Instruments |
| Reading list | 1. Giancoli, D.C. 2014. *Physics Principle with Applications*. Boston: Pearson Education, Inc.
2. Knight, R.D. 2013. *Physics for Scientists and Engineers: a Strategic Approach*. Boston: Pearson Education, Inc.
3. Serway, R. A. & Jewett, J. W. 2004. *Physics for Scientists and Engineers*. New York: Thomson Brooks.
4. Webb, R. H. 2005. *Elementary Wave Optics*. Dover Publications.
5. Young, H. D., Freedman, R. A., Sears, & Zemansky’s. 2012. *University Physics with Modern Physics* (13th edition). San Fransisco: Pearson Education.
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