USK UNIVERSITAS SYIAH KUALA

FACULTY OF AGRICULTURE

DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM **MODULE HANDBOOK**

Module designation	Practicum of physics (SSOL1005)
Semester(s) in which the module is taught	1st semester
Person responsible for the module	Dr. Gunawati,S.Si.
Language	Indonesian, English
Relation to curriculum	Compulsory module for Soil Science Department
Teaching methods	Practice, lecture, presentation
Workload (incl. contact hours, self-study hours)	✔ 170 minutes of practice per week (field/laboratory 50 minutes; structured learning 60 minutes; 60 minutes self-study)
Credit points	1 SKS = 1.6 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	✔ Students are able to possess fundamental knowledge and skills in using measuring instruments and applying correct measurement techniques. ✔ Students are able to demonstrate critical thinking skills in understanding and analyzing fundamental physics concepts.
Content	This course consists of laboratory activities designed to provide students with a deeper understanding of the theories and fundamental concepts of physics discussed in the introductory physics lectures. The practicum includes a series of experiments aimed at developing practical skills, observation abilities, and data analysis techniques essential in the context of basic physics. Students will be encouraged to think critically, enhance analytical skills, and apply fundamental physics concepts to real-world situations.
Exams and assessment formats	Report, exam
Study and examination requirements	✔ Report: 50% ✔ Exam: 50%

Reading list	1. Halliday, D., Resnick, R., & Walker, J. (2013). Fundamentals of physics. John Wiley & Sons. 2. Krane, K. S. (2019). Modern physics. John Wiley & Sons. 3. Mansfield, M. M., & O'sullivan, C. (2020). Understanding physics. John Wiley & Sons. 4. Borgnakke, C. (2025). Fundamentals of thermodynamics. John Wiley & Sons. 5. Young, H. D. (2004). Sears dan zemonsky fisika universitas. Erlangga. 6. Young, H. D., & Freedman, R. A. (2003). Fisika Universitas edisi kesepuluh jilid 2. 7. Arfken, G. (2012). University physics. Academic Press. 8. Reichl, L. E. (2016). A modern course in statistical physics. John Wiley & Sons. 9. Thorne, K. S., & Blandford, R. D. (2017). Modern classical physics: optics, fluids, plasmas, elasticity, relativity, and statistical physics. Princeton University Press.