



USK
UNIVERSITAS
SYIAH KUALA

FACULTY OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM

MODULE HANDBOOK

Module designation	Practicum of Biology (SSOL1013)
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Dr. Alia Rizki, S.Si, M.Sc.
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	<ul style="list-style-type: none">✓ Students are able to demonstrate independence in the laboratory and operate basic laboratory instruments (e.g., microscope).✓ Students are able to observe, analyze, and illustrate the structure and function of cells.✓ Students are able to understand and explain the concept of recessive gene frequency.✓ Students are able to observe, analyze, tabulate, and illustrate the structure and function of living organisms.
Content	This practicum course in introductory biology is designed to train students in basic laboratory techniques and to reinforce fundamental biological concepts. The practicum broadly covers scientific processes and methods of life, the scope of biology, cell structure and functions related to reproduction, respiration, and photosynthesis. It also introduces classical and modern genetics, the structure and function of plant and animal organs, and the biological systematics of living organisms.
Exams and assessment formats	Quiz, assignment, mid-term exam, and final exam
Study and examination requirements	<ul style="list-style-type: none">✓ Quiz: 10%✓ Assignment: 50%✓ Mid-term exam: 20%✓ Final Exam: 20%

Reading list	<ol style="list-style-type: none"> 1. Allison, L. A. (2021). Fundamental molecular biology. John Wiley & Sons. 2. Katzman, S., Hurst-Kennedy, J., Barrera, A., Talley, J., & Higgins, R. (2020). Fundamentals of Cell Biology. Athens, Georgia: University System of Georgia. 3. Bhatla, S. C., & Lal, M. A. (2023). Plant physiology, development and metabolism. Springer Nature. 4. Allison, L. A. (2021). Fundamental molecular biology. John Wiley & Sons. 5. Slack, J. M., & Dale, L. (2021). Essential developmental biology. John Wiley & Sons. 6. Niklas, K. J. (2020). Plant evolution: an introduction to the history of life. University of Chicago Press. 7. Szulkin, M., Munshi-South, J., & Charmantier, A. (Eds.). (2020). Urban evolutionary biology. Oxford University Press. 8. Campbell, N. A., Reece, J. B., Urry, L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V., & Jackson, R. B. (2015). Biology: a global approach. biotechnology [1SLO1, 1SLO6], 1, 1L7S1. 9. Kierszenbaum, A. L., & Tres, L. (2015). Histology and Cell Biology: an introduction to pathology E-Book. Elsevier Health Sciences. 10. Bahadur, B., Rajam, M. V., Sahijram, L., & Krishnamurthy, K. V. (Eds.). (2015). Plant biology and biotechnology (pp. 361-383). New Delhi: Springer. 11. Cronk, J. K., & Fennessy, M. S. (2016). Wetland plants: biology and ecology. CRC press.
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