USK UNIVERSITAS SYIAH KUALA

FACULTY OF AGRICULTURE

DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM **MODULE HANDBOOK**

Module designation	Biology (SSOL1011)
Semester(s) in which the module is taught	1st 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	Lecture, presentation, focus group discussion
Workload (incl. contact hours, self-study hours)	✔ Lecture and discussion 100 minutes per week per semester ✔ Structured tasks 120 minutes per week per semester ✔ Personal tasks 120 minutes per week per semester
Credit points	2 SKS = 3.2 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	✔ Students are able to understand and explain the structure, function, and metabolism of cells. ✔ Students are able to understand and explain both classical and modern genetics. ✔ Students are able to understand and explain the structure and function of plant and animal organs. ✔ Students are able to identify and describe biological systematics of living organisms and the basic principles of ecology.
Content	This introductory biology course provides an overview of fundamental biological concepts and principles. The course broadly covers the scientific processes and methods of life, the scope of biology, cell structure and function related to reproduction, respiration, and photosynthesis. It also includes the study of classical and modern genetics, the introduction to the structure and function of plant and animal organs, biological systematics of living organisms, and basic ecological principles.
Exams and assessment formats	Quiz, assignment, mid-term exam, and final exam
Study and examination requirements	✔ Quiz: 10% ✔ Assignment: 20% ✔ Mid-term exam: 35% ✔ Final Exam: 35%

Reading list	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.