



USK
UNIVERSITAS
SYIAH KUALA

FACULTY OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM

MODULE HANDBOOK

Module designation	Chemistry (SSOL1007)
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Prof Dr. Febriani, S.Si, M.Si
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)	<ul style="list-style-type: none">✓ 100 minutes lecture and discussion per week✓ 120 minutes structured tasks per week✓ 120 minutes learn to be independent per week
Credit points	2 SKS = 3.2 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ul style="list-style-type: none">✓ Students are able to explain the concepts of atoms, molecules, molecular orbitals, chemical bonds, the periodic system, and the properties of elements.✓ Students are able to explain fundamental chemical principles and perform calculations related to basic chemistry.
Content	The Introduction to Chemistry course explores the properties and changes of matter, atomic and molecular structure, the periodic system and its periodic trends, stoichiometric calculations, chemical bonding, chemical equilibrium, and solutions including concentration calculations.
Exams and assessment formats	Assignment, tutorial, mid-term exam, final exam
Study and examination requirements	<ul style="list-style-type: none">✓ Report: 20%✓ Tutorial: 10%✓ Mid-term Exam: 35%✓ Final Exam: 35%

Reading list	<ol style="list-style-type: none">1. Chang, R., and Overby, J., 2011. General Chemistry: The Essential Concepts, 6th Edition, McGraw-Hill Education2. John Kenkel, 2011, Basic Chemistry Concepts and Exercises, CRC Press Taylor & Francis Group, 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-27423. Olmsted, J. A., Williams, G. M., & Burk, R. C. (2016). Chemistry. John Wiley & Sons.4. Oxtoby, D. W., Gillis, H. P., & Butler, L. J. (2016). Principles of modern chemistry. Cengage AU.5. O'neill, P. (2017). Environmental chemistry. Routledge.6. Pfennig, B. W. (2022). Principles of inorganic chemistry. John Wiley & Sons.7. Haynes, W. M. (2016). CRC handbook of chemistry and physics. CRC press.
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