UNDERGRADUATE PROGRAM **MODULE HANDBOOK**

Module designation	Practicum of Chemistry (SSOL1009)
Semester(s) in which the module is taught	1st 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	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 perform laboratory procedures, using basic chemical equipment, applying safety and security standards, and managing chemical materials, equipment, and laboratories.
Content	The Introductory Practicum of Chemistry course provides hands-on experience on the following topics: Introduction to laboratory equipment, matter and its changes, chemical reactions, fundamental laws of chemistry, periodic table of elements, reaction stoichiometry, chemical bonding and molecular structure, chemical equilibrium, solutions and concentration, acid-base solutions, and mixture separation techniques.
Exams and assessment formats	Participatory, laboratory activities, report, final exam
Study and examination requirements	✔ Participatory: 15% ✔ Laboratory activities: 30% ✔ Report: 30% ✔ Final Exam: 25%

Reading list	1. Chang, R., and Overby, J., 2011. General Chemistry: The Essential Concepts, 6th Edition, McGraw-Hill Education 2. John Kenkel, 2011, Basic Chemistry Concepts and Exercises, CRC Press Taylor & Francis Group, 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742 3. 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.