Module designation	Basic Chemistry II
Module level, if applicable	Undergraduate
Code, if applicable	PIPAUM6302
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	Even/Autumn Term
Person responsible for the module	Isnanik Juni Fitriyah, S.Pd., M.Si.
Lecturer	Isnanik Juni Fitriyah, S.Pd., M.Si., Dr. Munzil, M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Undergraduate degree program, elective, 2^{th} semester.
Type of teaching, contact hours	Direct instruction for lectures, cooperative learning for experiments, 200 minutes for lectures and 170 minutes for experiments per week
Workload	1. Lectures: 4 x 50 = 200 minutes (3.3 hours) per week. 2. Exercises and Assignments: 4 x 60 = 240 minutes (4 hours) per week. 3. Private study: 4 x 60 = 240 minutes (4 hours) per week. 4. Experiments: 170 minutes per week
Credit points	4 credit points (~6.35 ECTS-eq).
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.
Recommended prerequisites	Basic Chemistry I
Module objectives/intended learning outcomes	After completing this module, students are expected to: LO 4: analyze science phenomena in an integrated manner to solve problems logically, critically, systematically, and critically using information technology as data resources in the form of team work that respect the originality of other works.
Content	1. Acid Bases; concept of acid, base, electrolyte solution, buffer, solution pH, titration. 2. Chemical reactions; equilibrium, Le Chatelier's

	principle, reaction rate equations, collision theory, enthalpy, Hess's Law, oxidation and reduction reactions. 3. Thermochemistry; Galvanic cells, electrolysis. The topics on the subject are focused to the following subtopics: 1. Acid base 2. Type of balance 3. Le Chatelier's Principles 4. Equilibrium constant 5. Reaction rate equation 6. Collision theory 7. Reaction order 8. System and environment 9. Enthalpy change 10. Standard enthalpy 11. Hess's Law 12. Oxidation reaction 13. Reduction reaction 14. Electrolyte solution 15. Colligative nature 16. Buffer solution 17. Boiling point 18. Freezing point 19. Salt 20. pH 21. Stochiometry 22. Acid base titration 23. Reaction kinetics 24. Galvanic cells 25. Electrolysis
Study and examination requirements and forms of examination	Assesment of student learning achievement by assessing daily assignments, class discussions, practical performance, writing experiments reports, midterm and final semester exams.
Media employed	Whiteboard, power point, youtube, sipejar.
Reading list	1. Bauer, R. C., Birk, R. T.& Marks, P. S.2010. *Introduction to Chemistry: A Conceptual Approach*. New York: McGraw-Hill Companies, Inc. 2. Chang, R. & Overby, J. 2011. *General Chemistry: The Essential Concept* (6^{th} edition). New York: McGraw-Hill Companies, Inc.

	3. Hein, M., Pattison, S. & Arena, S. 2012. *Introduction to General, Organic, and Biochemistry* (10th edition). New Jersey: John Wiley & Sons, Inc. 4. Timberlake, K.C. 2012. *Chemistry: An* Introduction to *General, Organic, and Biological Chemistry* (11th edition). Illinois: Pearson Education, Inc. 5. Zumdal, S. S., Zumdal, S. L. & Decoste, D. J. 2007. *The World of Chemistry*. Boston: Houghton Mifflin Company.
Date of last amendment made	May, 2020