

Email: ipa.fmipa@um.ac.idWebsite: <http://ipa.fmipa.um.ac.id/>

Module designation	Biochemistry
Module level, if applicable	Undergraduate
Code, if applicable	PIPAUM6601
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	Odd/Spring Term
Person responsible for the module	Novida Pratiwi, S.Si, M.Sc.
Lecturer	Novida Pratiwi, S.Si, M.Sc.; Safwatun Nida, S.Si, M.Pd, Ph.D (candidate); Dr. Dian Nugraheni, S.Pd, M.Sc. (candidate)
Language	Bahasa Indonesia
Relation to curriculum	Undergraduate degree program, compulsory, 3th semester
Type of teaching, contact hours	Cooperative learning
Workload	1. Lectures: 3 x 50 = 150 minutes (2.5 hours) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week.
Credit points	3 credit points (~4.76 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 II, Basic Biology II
Module objectives/intended learning outcomes	After completing this module, students are expected to: LO4: 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. Structure and function of biomolecules (carbohydrates, proteins, lipids, and nucleic acids) 2. Metabolism of biomolecules (carbohydrates, lipids, and proteins) 3. The molecular basis of heredity

	4. Biotechnology (basic)
Study and examination requirements and forms of examination	Assignment, Mid-term examination, and Final examination
Media employed	LCD, websites, Youtube Video, SIPEJAR
Reading list	<ol style="list-style-type: none"> 1. Moore, J.T & Langley, R. 2008. <i>Biochemistry for Dummies</i>. Hoboken: Wiley Publishing, Inc. 2. Nelson, D.L. dan Cox, M.M. 2012. <i>Principles of Biochemistry, 6th edition</i>. London: W.H. Freeman and Company, Macmillan Publisher 3. http://www.ncbi.nlm.nih.gov 4. https://www.youtube.com/watch?v=VpmT7Lw_4v0 about DNA replication 5. https://www.youtube.com/watch?v=DkT6XHWne6E about process of PCR 6. https://www.youtube.com/watch?v=2BwWavExcFI about process of DNA transcription and translation 7. https://www.youtube.com/watch?v=JtkhHIG3nx4 about technical process of GMO (Genetically Modification Organism) 8. https://www.youtube.com/watch?v=13h5oC4jIsk&t=56s about Photosynthesis 9. https://www.youtube.com/watch?v=7J4LXs-oDCU about Cell Respiration 10. https://www.youtube.com/watch?v=9dgthf7Z7fw about Cholesterol, LDL, HDL, and Lipoprotein 11. https://www.youtube.com/watch?v=sICmrtFHFQQ about Beta-oxidation process of Fatty Acid
Date of last amendment made	May, 2020