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| 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 |
| 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, 3thsemester |
| 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.
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| 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, a student is expectedto:LO4 Analysing the structure and function of biomolecules, biomolecular metabolism, and the application of biotechnology in life as a basis for further study of biology and science topicsLO11 Processing, reasoning, and presenting various experiments related to the structure and function of biomolecules, biomolecule metabolism, and critical thinking applications of biotechnology |
| 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)
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| Study and examination requirements and forms of examination | Assignment, Mid-term examination, and Final examination  |
| Media employed | LCD, websites, Youtube Video, SIPEJAR |
| Reading list | 1. Moore, J.T & Langley, R. 2008. *Biochemistry for Dummies*. Hoboken: Wiley Publishing, Inc.
2. Nelson, D.L. dan Cox, M.M. 2012. *Principles of Biochemistry, 6th edition*. 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=9dghtf7Z7fw> about Cholesterol, LDL, HDL, and Lipoprotein
11. <https://www.youtube.com/watch?v=slCmrtFHFQQ> about Beta-oxidation process of Fatty Acid
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