



THE MODULE HANDBOOK
FACULTY OF BIOLOGY
MASTER PROGRAMME

BIOCHEMISTRY

Module code	BIO-60101
Module level	1 st year of Master Program in Biology
Abbreviation, if applicable	-
Courses related	-
Semester	Odd, Even
Course coordinator(s)	Dr. Rarastoeti Pratiwi, M.Sc
Lecture(s)	1. Dr. Rarastoeti Pratiwi, M.Sc 2. Dr. Yekti Asih Purwestri, M.Si 3. Dr. Tri Rini Nuringtyas, M.Sc 4. Dr. Woro Anindito Sri Tunjung, M.Sc
Language	Bahasa Indonesia and English
Classification within the Curriculum	Compulsory Courses
Teaching format/class hours per week during the semester	This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination.
Workload	Estimated working hour: 7.0 hours/week.
Credit	2-0 credits
Requirements	-
Course Learning Outcome	1. Able to master concepts, principles, and theories in biochemistry regarding structure, function, and role of biomolecules. 2. Able to integrate and evaluate information and data of biochemical processes in organisms as



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	<p>well to analyze and solve problems in biochemistry.</p> <p>3. Able to effectively explore, use, and summarize scientific references as well to bridge theories and realities of life at molecular level.</p>
Syllabus	<p>Biochemistry is a compulsory subject learning about chemical aspects of life. Structure and Function of Proteins (as well glycoproteins, lipoproteins, proteoglycans), Membrane structure and transport through membranes, Activity and synthesis of enzymes, Regulations of metabolism, Electron transport and ATP synthesis in mitochondria and thylakoid, Carbohydrate synthesis and its regulation, Photorespiration, CO₂ fixation, Nitrogen cycle, Nucleic acid metabolism, Gene expression and its regulation</p>
Study/exam achievements	<p>a. Midterm: 25%</p> <p>b. Final examination: 35%</p> <p>c. Personal Assignments: 30%</p> <p>d. Group Assignments : 15%</p>
Forms of media	<p>White board, notebook, LCD</p>
Reference	<ol style="list-style-type: none">1. Boyer, R. 1999. Concept in Biochemistry. Brooks Cole Publishing Company Horton HR.2. Devlin, T.M. (Ed). 2007. Textbook of Biochemistry with Clinical Correlation. 6th edition. John Wiley & Sons. Canada.3. Goodwin, T.W. and E.I. Mercer. 1983. Introduction to Plant Biochemistry. Second edition. Pergamon Press.4. Mathews, C.K., K.E. van Holde and K.G. Ahern. 2000. Biochemistry. Addison-Wesley Publishing Company.5. Moeljopawiro, S. 1997. Isolasi dan purifikasi enzim polymerase DNA thermostabil. Berkala Biologi 2(3) : 115-128.6. Morell, R., T.B. Friedman, S. Moeljopawiro, Hartono, Soewito and J.H. Asher. 1992. A frameshift mutation in the HuP2 paired domain of the probable human homolog of murine Pax-3 is responsible for Waardenburg syndrome type 1 in an Indonesian family. Human Molecular Genetics 1(4) : 243-247.7. Nelson, D.L. and M.M. Cox. 2000. Lehninger: Principles of Biochemistry. Third Edition. Worth Publisher.8. Paramita, D.K. and S. Moeljopawiro. 1997. Pengaruh pemberian diazinon 60 EC per oral terhadap aktivitas enzim kolinesterase plasma darah tikus putih (<i>Rattus norvegicus</i> L.). Berkala Biologi 2(3) : 115-128.9. Stryer, L. 1995. Biochemistry. Fourth Edition. W.H. Freeman and Company. New York.



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10. Winata, S., N. Arhya, S. Moeljopawiro, J.T. Hinnant, J.L. Weber, Y. Liang, T. Friedman, and J.H. Asher Jr. 1995. Congenital non-syndromal autosomal recessive deafness in Bengkulu, an isolated Balinese village. *J. Med. Genet.* 32 : 336-343.
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