



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

MASTER PROGRAMME

Enzymology

Module code	BIO-60103
Module level	1 st year of Master Program in Biology
Abbreviation, if applicable	-
Courses related	-
Semester	Odd
Course coordinator(s)	1. Dr. Yekti Asih Purwestri, M.Si
Lecture(s)	2. Dr. Rarastoeti Pratiwi, M.Sc 3. Dr. Yekti Asih Purwestri, M.Si 4. Dr. Tri Rini Nuringtyas, M.Sc 5. Dr. Woro Anindito Sri Tunjung, M.Sc
Language	Bahasa Indonesia and English
Classification within the Curriculum	Elective 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 explain how organism controls and regulate enzymes during its development process, environmental conditions, and the enzymatic process behind 2. Able to present and explore original ideas for the research and innovation of enzymatic research
Syllabus	This course discusses important components in the chemistry of life processes, with further and in-depth discussion about the structure and function of enzyme, as holoenzyme and the diversity of simple or complex enzymes (supra-molecular complexes), enzyme mechanisms, enzyme kinetics and its regulation. The course will also discuss the working system of single enzymes and enzyme interaction as organizational systems of enzymes that support metabolic processes, vectoral organizations in cell compartmentation, multi-enzyme protein properties, biosynthesis and enzyme turnover, control of metabolic pathways, clinical aspects of enzymes, enzyme technology and application of enzyme utilization. Comparison of in-vivo and in-vitro activity measurements, and interpretation of measurement results, assay techniques, sampling techniques, solation techniques and enzyme purification, "enzyme purification vs enzyme recovery"



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

MASTER PROGRAMME

Study/exam achievements	<ul style="list-style-type: none">a. Midterm: 35%b. Final examination: 40%c. Projects & Presentation: 15%d. Essay: 10%
Forms of media	White board, notebook, LCD
Reference	<ul style="list-style-type: none">1. Price, n.C. & L. Stevens 1984. Fundamentals of Enzymology, Oxford University Press, New York2. Buchanan, B.B., Grissem, W & R.L. Jones, 2001. Biochemistry and Molecular Biology of plants, American Society of Plant Physiologist, Maryland, USA.3. Dixon, M. & E.C, Webb ,1979, Enzymes , Third Edition, Longman Group Limited and Academic Press, New York, USA4. Lehninger, A.L., Nelson, D.L. & M.M. Cox , 2000. Principles of Biochemistry, Third Edition. Worth Publishe Lea, P.J. & R.C. Leegood, 1993. Plant Biochemistry and Molecular Biology, John Wiley and Sons, Chichester, New York USA5. Mathews, C.K., Van Holde, K.E. & K.G. Ahern, 2000. Biochemistry, Addison Wesley Publishing Company, New York6. Segel, L.H. 1976. Biochemical Calculation, How to Solve Mathematical Problems in General Biochemistry, Second Edition, John Wileyand Sons, New York, USA7. Stryer, L. 1995, Biochemistry, Fourth Edition, W.H. Freeman and Company, New York, USA
