



## UNIVERSITAS NEGERI YOGYAKARTA

### FACULTY OF MATHEMATICS AND NATURAL SCIENCES DEPARTMENT OF BIOLOGY EDUCATION

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## Bachelor of Education in Biology

## MODULE HANDBOOK

Module name:	Laboratory Work in Immunology
Module level, if applicable:	Undergraduate
Code:	BIO 6134
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	Even
Module coordinator:	Dr. Heru Nurcahyo
Lecturer(s):	Tri Harjana, M.P
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory subject
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 minutes structured activities, and 120 minutes individual studyper week
Work load:	Total workload is 91 hours per semester which consists of 100 minuteslectures, 120 minutes structured activities, and 120 minutes individual study per weekfor 16 weeks.
Credit points:	2 SKS (3 ECTS)
Prerequisites course(s):	General Biology
Perogram Learning Outcomes:	PLO4. Mastering basic biology and other relevant knowledge with mathematics and sciences. PLO7. Being able to do independent laboratory work and fieldwork.
Course Outcomes	After taking this laboratory works, the students have ability to: CO1. Identify the concept ABO blood test to understanding the antigen and antibody how it works CO2. Understand the concept of the pregnancy test using anti $\beta$ -hCG to understanding the antigen and antibody how it works CO3. Elaborate the recent development of <i>Radioimmunoassay</i> (RIA) methods CO4. Elaborate the recent development of <i>Enzyme Linkage Immunosorbent Assay</i> (ELISA) methods CO5. Apply Immuno Histological-Cytological” or ”Immunohisto-cytochemistry” Methods CO6. Elaborate molecular structure of Immunoglobulin (Ig) Model for Immunology Research

	<p>CO7. Communicate the Individual Projects about Immunology researchs</p> <p>CO8. Explain the concept, source and effect of recombinant vaccination</p> <p>CO9. Apply the concept of antigen binding site (ABS) and its implication</p> <p>CO10. Elaborate the concept of structure and function of molecule Immunoglobulin (Ig) and its implication</p> <p>CO11. Describe the definition, stages and roles of auto immune disease analyses</p> <p>CO12. Communicate the result of monoklonal antibody (MoAb) study</p>															
Content:	<p>This laboratory work of Immunology provide the problems, interaction between biophysic environment and its function in sustainable development, technology, new paradigm on immunology and short term solution in daily live.</p> <p>Immunology and its application in some bidang kehidupan dan produk-produk yang dihasilkan</p>															
Study/examachievements:	<p>The final mark will be weight as follow:</p> <table><tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr><tr><td>1</td><td>CO1 to CO12</td><td>Observed attitudes , knowledge, and skills</td><td>Survey, test, rubrics and manuals</td><td>100%</td></tr><tr><td colspan="4">Total</td><td>100%</td></tr></table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1 to CO12	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	100%	Total				100%
No	CO	Assessment Object	Assessment Technique	Weight												
1	CO1 to CO12	Observed attitudes , knowledge, and skills	Survey, test, rubrics and manuals	100%												
Total				100%												
Forms of media:	Real objects, model, multimedia															
References:	<p>A. Brosnan, Deborah M. &amp; Hopson Janet L.(1990). <i>Essentials of Biology</i>. New York: Mcgraw-Hill Publishing Company</p> <p>B. Champbell, N.A. ,Reece, J.B.&amp; Mitchell, L.G. (2000). <i>Biologi Edisi kelima, jilid III (Terjemahan)</i>. Jakarta: Penerbit Erlangga. Buku asli diterbitkan tahun 1999.</p> <p>C. Guyton, Arthur C. &amp; Hall, John E. (1996). <i>Fisiologi Kedokteran</i>. (Terjemahan oleh Irawati Setiawan). Jakarta: Penerbit EGC. Buku asli diterbitkan tahun 1996.</p> <p>D. Junqueira Luis C. &amp; Carneiro Jose. (1980). <i>Histologi Dasar Edisi 3</i>. (Terjemahan oleh Adji Dharma). Jakarta: Penerbit EGC. Buku asli diterbitkan tahun 1980.</p> <p>E. Miller, K. R. &amp; Levine, J. (1993). <i>Biology</i>. United States of America: Prentice Hall.</p> <p>F. Way, Jane &amp; Travers. (1996). <i>Immunobiology The Immun System In Health And Disease</i>. New York: Current Biology Ltd.</p>															

### PLO and CO mapping

[illegible]

	1	2	3	4	5	6	7	8	9	10	11	12
C01				✓			✓					
C02				✓			✓					
C03				✓			✓					
C04				✓			✓					
C05				✓			✓					
C06				✓			✓					
C07				✓			✓					
C08				✓			✓					
C09				✓			✓					
C010				✓			✓					
C011				✓			✓					
C012				✓			✓					