



# UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND SCIENCE  
DEPARTMENT OF BIOLOGY EDUCATION

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**Bachelor of Science in Biology**

**MODULE HANDBOOK**

Module name:	Laboratory Work in Immunology
Module level, if applicable:	Undergraduate
Code:	BIO6233
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 Course
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:	<p>4. Comprehensively mastering Biology (core biology) to solve problems in the field of Biology (problem-solving) and to underlie the concepts of related sciences</p> <p>6. Being adaptive, creative, innovative in applying the concepts of Biology and other related fields</p> <p>9. Being able to work and create jobs/being an entrepreneur in the field of Biology</p> <p>11. Possessing scientific skills to support the ability to speak in local, national, and international forums</p>
Course Outcomes	<p>After taking this laboratory works, the students have ability to:</p> <p>CO1. Identify the concept ABO blood test to understanding the antigen and antibody how it works</p> <p>CO2.Understand the concept of the pregnancy test using anti <math>\beta</math>-hCG to understanding the antigen and antibody how it works</p> <p>CO3. Elaborate the recent development of <i>Radioimmunoassay</i> (RIA) methods</p> <p>CO4. Elaborate the recent development of <i>Enzyme Linkage Immunosorbent Assay</i> (ELISA) methods</p> <p>CO5. Apply Immuno Histological-Cytological” or ”Immunohisto-</p>

	<p>cytochemistry” Methods</p> <p>CO6. Elaborate molecular structure of Immunoglobulin (Ig) Model for Immunology Research</p> <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 border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO1 to CO12</td> <td>Observed attitudes , knolwedge, and skills</td> <td>Survey, test, rubrics and manuals</td> <td>100%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1 to CO12	Observed attitudes , knolwedge, and skills	Survey, test, rubrics and manuals	100%	Total				100%
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1	CO1 to CO12	Observed attitudes , knolwedge, 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**

