

## Project in Cell and Molecular Biology

Module name		Project in Cell and Molecular Biology				
Module level		3rd year of Bachelor program				
Abbreviation, if applicable						
Sub-heading, if applicable						
Courses included in the module, if applicable		BI-3104 Project in Cell and Molecular Biology				
Semester/term		5 <sup>th</sup> Semester				
Module coordinator(s)		Dr. Fenny Dwivany				
Lecturer(s)		Dr. Fenny Dwivany Dr. Indra Wibowo				
Language		Indonesian				
Classification within the Curriculum		Compulsory courses for Bachelor Program in Biology				
Teaching format/ class hours per week during the semester		2 parallel classes consists of 40 students / class: 1) 1-12 <sup>th</sup> week Introduction (Face to face lecture): 1 hr for 12 weeks Mini Project: 4 hr for 12 weeks 2) 13-14 <sup>th</sup> week Student class presentation/group (4-5 students/group) 5 hr for 2 weeks				
Workload	Total Workload	126 hours; 2 CU				
		Face to face teaching	Structured Activities	Independent study	Exam	Total
	Practical class	32	58	32	4	126
Credit points		Project in Cell and Molecular Biology (2 CU)				
Requirements		<i>Genetics, Cell &amp; Molecular Biology I</i>				
Learning goals/competencies	<ol style="list-style-type: none"> <li>1. Introduction to Biosafety in Cell &amp; Molecular Biology Experiments)</li> <li>2. Cell Culture</li> <li>3. Introduction to basic analysis using some equipment in Cell &amp; Molecular Biology (eg: Microscope, Centrifuge, Electrophoresis)</li> <li>4. Isolation and analysis of DNA/RNA/Protein (eg: PCR, Cloning, Genetic Transformation)</li> <li>5. Introduction to Bioinformatics</li> </ol>					
Content	<p><i>After completion of this module students are expected to be able to:</i></p> <p>Knowledge :</p> <ul style="list-style-type: none"> <li>• <i>describe and analyze the principle &amp; mechanism of cell and molecular biology experiments</i></li> </ul> <p>Skill:</p> <ul style="list-style-type: none"> <li>• <i>perform &amp; analyze of cell and molecular biology experiments</i></li> <li>• <i>Search for and present relevant information from scientific publications dealing with cell &amp; molecular biology technology</i></li> </ul> <p>Competences :</p> <ul style="list-style-type: none"> <li>• <i>Interpret and apply the latest technology in cell &amp; molecular biology experiments</i></li> <li>• <i>Design research methodologies to answer research question or hypothesis</i></li> </ul>					
Study/exam achievement	Class (100%)					
		Midterm exam	Final exam	Student Class Presentation	Total	
	Lecture	35%	40%	25%	100%	
	Practical	35%	40%	25%	100%	
Forms of media	Classical teaching tools:		white board/ chalk and talk, power point, film, animation, practical class			
	Integrated teaching tools:		-			
	Digital teaching tools:		Web based bioinformatics tools			
	Problem based teaching tools:		Journal			

Literature	<i>Ausubel FM, Brent R, Kings RE, Moore DD, Seideman JG, Smith JA&amp; K struhl. 1995. Short Protocols in Molecula Biology; Cells JE. 1998. Cell Biology: A laboratory handbook Volume 1-4.</i>
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