

## Biostatistics

Module name		Biostatistics					
Module level		2 <sup>nd</sup> year of Bachelor program					
Abbreviation, if applicable							
Sub-heading, if applicable							
Courses included in the module, if applicable		MA2082 Biostatistics					
Semester/term		4 <sup>th</sup> Semester					
Module coordinator(s)		Dr. Kreshna I.A. Syuhada					
Lecturer(s)		Dr. Kreshna I.A. Syuhada Dr. Kurnia Novita Sari, M.Si					
Language		Indonesian					
Classification within the Curriculum		Compulsory courses for Bachelor Program in Biology					
Teaching format/ class hours per week during the semester		Lecture ( <i>Face to face lecture</i> ): 3 hours x 14 weeks Practical class: 3 hours x 16 weeks					
Workload	Total Workload	144 hours; 3 CU					
		Face to face teaching	Structured Activities	Independent study	Exam	Total	
	Lecture	42	-	48	6	96	
	Practical class	-	48	-	-	48	
Total		<b>144</b>					
Credit points		<i>Biostatistics (3 CU)</i>					
Requirements							
Content	<p>This course activities consist of lectures with scope:</p> <ul style="list-style-type: none"> <li>• Descriptive Statistics: Frequency distribution table, cumulative distribution table, contingency table, stem and leaf diagram, box-plot, histogram , selecting data transformation.</li> <li>• Opportunity, Distribution function: distributin function for a random variable, joint distribution function, conditional distribution function, cumulative distribution function, expectation and moment.</li> <li>• Discrete distribution: binomial and poisson</li> <li>• Continuous distribution: uniform, exponential, normal, t , <math>\chi^2</math> and F, law of central limit, law of large numbers, sampling technique.</li> <li>• Inference statistics for <math>\mu</math> and <math>\sigma^2</math> each for 1 population and 2</li> <li>• Anova</li> <li>• Linier regression method</li> <li>• Least squares method</li> <li>• Correlation</li> <li>• Quality control statistics</li> <li>• Time series analysis</li> </ul>						
Learning goals/ competencies	<p>After completion of this module students are expected to be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> <li>• Describe the key concepts in statistics</li> </ul> <p>Skill:</p> <ul style="list-style-type: none"> <li>• Process and analyze data, followed by decision making based on the data and their statistic knowledge.</li> <li>• Operate statistic software as computational tools and interpret the computation correctly.</li> </ul> <p>Competences:</p> <ul style="list-style-type: none"> <li>• Apply and integrate the knowledge and logical understanding of matters based on the factual data.</li> </ul>						
Study/exam achievements	<ul style="list-style-type: none"> <li>• <i>Midterm exam 1</i> : 30%-35%</li> <li>• <i>Midterm exam 2</i>: 35%-40%</li> <li>• <i>Assignment + Quizzes</i>: 10%-15%</li> <li>• <i>Practical class</i>: 10%-15%</li> </ul>						
Forms of media		<i>Classical teaching tools:</i>		<i>white board/ chalk and talk, power point</i>			
		<i>Integrated teaching tools:</i>					

	<i>Digital teaching tools:</i>	
	<i>Problem based teaching tools:</i>	<i>Practical class</i>
Literature	<ol style="list-style-type: none"> <li>1. Walpole, R.E., Myers, R.H., Myers S.L. and Ye, Keying. 2012. <i>Probability and Statistics for Engineers dan Scientists</i>, 9th edition. Prentice-Hall.</li> <li>2. Rosner. 2006. <i>Fundamental of Biostatistics</i>, 6th edition. Duxbury.</li> </ol>	