

Module/Course Description Biology (BIO100)

A. Module Identity		
1.	Name	Biology
2.	Code	BIO100
3.	Credit	3 (3-2)
4.	Semester	1 / 2
5.	Pre-requisite	-
6.	Coordinator	
7.	Lecturers	Lecturer team of Biology Department, Faculty of Mathematics and Natural Science
8.	Language	Indonesian
9.	Program(s) in which the course is offered	Internal department: Forest Management Study Program Other departments: all study programs offered by IPB University
10.	Type of teaching	a. Traditional classroom: 100 % b. Blended system: Traditional classroom....%, Online....% c. e-Learning system:% d. Others:%

B. Workload of course components (total contact hours and credits per semester)								
Credit		Contact Hours				Self-Study	Other	Total
SKS *)	ECTS	Lecture	Exercise	Laboratory	Practice			
3		28		42		56		126

*) Semester credit unit according to the Indonesian higher educational system

1 credit unit lecture = 2 hours/ week for lecture and 2 hours/ week for self-study within 14 weeks/ semester

1 credit unit class exercise or laboratory or field practice = 3 hours/week within 12-14 weeks/semester

***) 1 hour for lecture= 50 minutes; 1 hour for class exercise or laboratory or field practice = 60 minutes

C. Module Objective (Learning Outcomes)
Students are able to explain the scope of biology and the history of life, cell structure, cellular respiration and photosynthesis, the basis of cellular reproduction, and the principles of genetics and its application in biotechnology field. In addition, students are able to explain the diversity and biological functions of monera, protists, plantae, animalia, and the interaction of living things with their environment and the importance of organisms and environment conservation

D. Detailed Course Learning Outcomes (LO) in Relation to Learning Domains, Teaching Strategies, and Assignment Methods			
No.	LO in Learning Domains	Teaching Strategies	Assessment Methods
a.	Knowledge		
1.	Students are able to explain the scope of biology, observe and explain the structure and metabolism of cells	Lecturer's explanation, discussion	Authentic assessment
2.	Students are able to observe and explain the basic of reproduction cellular and patterns of inheritance.	Lecturer's explanation, discussion	Authentic assessment

3.	Students are able to observe and explain the structure and expression of genes, and biotechnology.	Lecturer's explanation, discussion	Authentic assessment
4.	Students are able to observe and explain the diversity, structure and biological functions of organisms: monera, protists, fungi, plantae, animalia.	Lecturer's explanation, discussion	Authentic assessment
5.	Students are able to observe and explain ecology: population, community, ecosystem and bioconservation	Lecturer's explanation, discussion	Authentic assessment
b.	Skills		
1.	Students are able to observe and explore the structure and metabolism of cells	Lecturer's explanation, practicum, discussion	Authentic assessment
2.	Students are able to observe and explore the basic of reproduction cellular and patterns of inheritance.	Lecturer's explanation, practicum, discussion	Authentic assessment
3.	Students are able to observe and explore the structure and expression of genes, and biotechnology.	Lecturer's explanation, practicum, discussion	Authentic assessment
4.	Students are able to observe and explore the diversity, structure and biological functions of organisms (monera, protists, fungi, plantae, animalia)	Lecturer's explanation, practicum, discussion	Authentic assessment
c.	Competences:		
1.	Students demonstrate a willingness to participate in the class activities	Lecturing, practical training, discussion	Authentic assessment
2.	Students are able to complete all tasks and participate in class discussion	Lecturing, practical training, discussion, assignment	Authentic assessment

E. Module Content		
List of Topic	Number of Weeks	Contact Hours
Scope of biology and origin of life	1	2
Exploring cell	1	2
Work of cell and cellular respiration	1	2
Photosynthesis	1	2
Reproduction of cell, structure, and gene expression	1	2
Pattern of inheritance	1	2
Basic principles of recombinant DNA technology (biotechnology)	1	2
Biological function, diversity and roles of Archaea, Bacteria, Protists, and fungi	1	2
Biodiversity evolution	1	2
The structure and function of plants	1	2
Characteristics and biological functions of animals	2	4
Population and community	1	2
Ecosystem and conservation biology	1	2

F. Course Assessments			
No.	Assessment Type *)	Schedule (Week Due)	Proportion of the Final Mark
1.	Mid-term Examination	8th Week	35%
2.	Final Examination	16 th Week	35%
3.	Practice (quiz, practice test, practice report)	Every Week	7,5%
4.	Practical Test	8 th Week, 16 th Week	10,5%
5.	Practical Report	Every Week	12,5%

**) Example: mid-term examination, final examination, quiz, homework, project, etc.*

G. Media Employed
Laptop, LCD, Microphone, White Board, Marker, Pointer

H. Learning Resources
<p>h1. Textbooks:</p> <ol style="list-style-type: none"> 1) Jane B. Reece, Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson. 2014. Campbell Biology.10th. Pearson Education, Inc. 2) Neil A. Campbell, Jane B. Reece. 2008. Biology 8th. Pearson Benjamin Cummings: San Francisco.