Module Descriptions

Module Designation	Applied Biology *Biologi Terapan*
Course Code	8420502055
Semester/Term	7th Semester
Person responsible for the module	Prof. Dr. Yuliani, M.Si Prof. Dr. Ir. Dyah Hariani, M.Si. Prof. Dr. Mahanani Tri Asri, M.Si.
Language	Bahasa Indonesia (Indonesian Language)
Relation to curriculum	Elective Course
Type of teaching	Lectures
Workload	Contact hours: 2 x 50 minutes lectures, Private study: 2 x 60 minutes structured activity, 2 x 60 minutes individual activity Total 79.33 hours per semester ~ 3.18 ECTS**
Credit Point	2 sks (3.18 ECTS)
Required and recommended prerequisites for joining the module	Animal Physiology, Plant Physiology, Microbiology
Module Objectives/intended learning outcomes	After taking this course, students will be: 1) Mastering the concepts of applied biology *(Knowledge)* 2) Able to apply the concepts and technology of Applied Biology in an effort to solve problems in food and natural resources and the environment. To support professional work as entrepreneurs in the field of Biology *(Knowledge)* 3) Able to apply skills in applied biology that can be transferred in biology to develop ecopreneurship (eco-innovation, eco-opportunity, eco-commitment) *(Special Competencies)* 4) Able to apply logical, critical, systematic and innovative thinking in the context of the development or implementation of applied biology *(General Competencies)* 5) Able to work independently, responsibly, both as individuals and in groups and able to work together. *(Attitude and Social)*
Content	The Applied Biology course discusses the application and utilization of Biology (Plants, Animals, Microbes) in the form of products and services to meet the needs of human life, analysis and problem-solving solutions in the field of Biology and its

<table>
<tr><td></td><td>application. The study of applied biology includes the role of microbes, animals and plants (function, working mechanism) in various Biological products, the use of animals, plants, microbes in various environmentally friendly biological products, probiotics, component and process analysis for cultivation, Integration of Biological elements in Ecopreneur. The Study of Applied Biology is accompanied by various process skills (minds on activity and hands on activity) which will be used to solve problems in the field of Biology and are used to train students to apply biology in entrepreneurship with an environmental perspective. Learning is delivered with presentations, discussions, assignments and projects to build ecopreneurship character.</td></tr>
<tr><td>Examination forms</td><td>Written exam</td></tr>
<tr><td>Study and examination requirements</td><td>Students are eligible for the final semester test if they have at least 75% attendance in class.

The final grade (NA) is calculated based on the following ratio:

<table>
<tr><th>Assessment Components</th><th>Percentage of contribution</th></tr>
<tr><td>Participation</td><td>20%</td></tr>
<tr><td>Assignment</td><td>30%</td></tr>
<tr><td>Mid-semester test</td><td>20%</td></tr>
<tr><td>Final semester test</td><td>30%</td></tr>
</table>

Grade Conversion of 0-100 scale into 0-4 scale is set as below:

<table>
<tr><th>Letter</th><th>Number</th><th>Grade interval</th></tr>
<tr><td>A</td><td>4.00</td><td>85 ≤ A ≤ 100</td></tr>
<tr><td>A-</td><td>3.75</td><td>80 ≤ A- <85</td></tr>
<tr><td>B+</td><td>3.50</td><td>75 ≤ B+ < 80</td></tr>
<tr><td>B</td><td>3.00</td><td>70 ≤ B < 75</td></tr>
<tr><td>B-</td><td>2.75</td><td>65 ≤ B- < 70</td></tr>
<tr><td>C+</td><td>2.50</td><td>60 ≤ C+ < 65</td></tr>
<tr><td>C</td><td>2.00</td><td>55 ≤ C < 60</td></tr>
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</td></tr>
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	D	1.00	40 ≤ D < 55
	E	0.00	0 ≤ E < 40
Reading List	1. Gosh, A. 2011. *Glioma-Exploring Its Biology and Practical Relevance*. In Tech: Rijeca. 2. Grumezescu A.m. and Alina maria H.2017. Food Bioconversion (A volume in Handbook of Food Bioengineering. Academic Press 3. Helen Treichel and Gislaine Fongaro Editors.2019. Improving Biogas Production: Technological Challenges, Alternative Sources, Future Developments.. Springer Nature Switzerland AG. 4. Nino, B. 2013. Probiotics, prebiotics and the gut microbiota.International Life Sciences Institute Europe Concise Monograph Series. Printed in Belgium. 5. Somerville, C. , Cohen, M,. Pantanella. E., Stankus. A. and Lovatelli. A. 2014. Small-scale aquaponic food production. Integrated fish and plant farming. Food and Agriculture Organization of The United Nations. Rome. 6. Taiz, L. and Zeiger, E. 2010. Plant Physiology. California: The Benjamin/Cummings Publishing Company, Inc 7. Toshio Takeuchi. Editor. 2017. Application of Recirculating Aquaculture Systems in Japan. Fisheries Science Series. Springer Japan KK and the Japanese Society of Fisheries Science.		