MINISTRY OF EDUCATION AND CULTURE
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
**DEPARTMENT OF NATURAL SCIENCES**
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| Module Name: | *Dasar-dasar Bioteknologi*<br>(Fundamentals of Biotechnology) |
| Module Level: | Bachelor degree/Undergraduate Programme |
| Course Code: | 8420102029 |
| Abbreviation, if applicable: | Biotech |
| Courses included in the module, if applicable: | Not applicable |
| Semester/term | Elective |
| Module coordinator(s): | Hasan Subekti, M.Pd. |
| Lecturer(s): | Dra. Evie Ratnasari, M.Si.;<br>Hasan Subekti, M.Pd.;<br>Aris Rudi Purnomo, S.Pd., M.Pd., M.Sc. |
| Language: | *Dasar-dasar Bioteknologi*<br>(Fundamentals of Biotechnology) |
| Classification within the curriculum: | Elective |
| Teaching format/class hours per week during the semester: | 2 contact hours of lectures (Indonesia credit semester or *sks**) |
| Workload: | 2 x 50 minutes lectures, 2 x 60 minutes structured activity, 2 x 60 minutes individual activity, 14 weeks per semester, 79.33 total hours per semester ~ 3.18 ECTS** |
| Credit point: | 2 *sks* (3.18 ECTS) |
| Requirements: | General Biology<br>(Code: 8420103023) |
| Learning goals/competencies: | **Course Learning Outcomes (CLOs):**<br>After taking this course, university students have ability to;<br>1. Applying its field of expertise in the pedagogical field of Integrated Science and utilizing IPTEKS to explore, collect, and evaluate (data and/or information) to solve learning literature professionally according to the situations and challenges faced.<br>2. Mastering the carrying, BKPM, and methods related to food engineering (fermentation techniques, agricultural engineering, engineering techniques), and bioethics, as well as how to teach research-based techniques to support their profession and solve the literature of learning Knowledge Integrated (professional).<br>3. Able to make appropriate decisions based on analysis of information and data to solve literature related to food techniques, both independently and in groups.<br>4. Products attitudes are able to cooperate and have social sensitivity (caring) as well as an attitude of responsibility in carrying out their professional duties. |

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<tr><td>Content:</td><td>Biotechnology in the context of the 21st century, bioinformatics, the principles of biotechnology (food) involves fermenting biotechnology, agricultural biotechnology, biotechnology engineering, and bioethics, as well as how to teach biotechnology with Integrating entrepreneurial perspectives.</td></tr>
<tr><td>Attribute Soft skill:</td><td>Discipline, collaboration, responsibility, and argumentation in the natural classroom setting</td></tr>
<tr><td>Study/exam achievements:</td><td>Students are considered to be competent and pass if at least get 40% of the maximum final grade. The final grade (NA) is calculated based on the following weight:<br><br>
<table>
<tr><th>Assessment Components</th><th>Percentage 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>
<tr><td>Total</td><td>100%</td></tr>
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<tr><td>Learning Methods</td><td>Constructivism, student-centered approach, project-based learning, lecturing, discussion, and presentation (structured activities), and flip learning</td></tr>
<tr><td>Form of Media:</td><td>LCD, PowerPoint slides, worksheets, and e-learning Vinesa (https://vinesa.unesa.ac.id)</td></tr>
<tr><td>Literature (primary references):</td><td>1. Chin. M.L., Field L., Schmidt J., Scritchfield R., & Toner, C. (2013). Food Biotechnology: A Communicator’s Guide to Improving Understanding 3rd Edition. California.<br>2. Schmid, R. D., & Dannert, C. S. (2016 ). Biotechnology: An Illustrated Primer. Weinheim: Wiley.<br>3. Thieman, W.J., & Palladino, M.A. (2013). Introduction to Biotechnology. International edition, 3ed. Boston: Pearson.<br>4. Subekti, H., Handriyan, A., Rudi, A. P., Eka, F. W., & Trisna, A. W. (2019). Bioteknologi: Sebuah Pembelajaran Terintegrasi STEM pada Mata Kuliah Bioteknologi bagi Mahasiswa Calon Guru IPA. Surabaya: Graniti.</td></tr>
<tr><td rowspan="2">Notes:</td><td>*1 sks in learning process = three contact hours that consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</td></tr>
<tr><td>**1 sks = 1,59 ECTS</td></tr>
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