

Module Handbook

Module Name:	Biotechnology
Module Level:	Bachelor
Abbreviation, if applicable:	BIT301
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	6 th / Third Years
Module coordinator(s):	Dr. Sri Sumarsih, M.Si.
Lecturer(s):	Dr. Purkan, M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum	Compulsory Course / Elective Studies
Teaching format / class hours per week during semester:	2 hours lectures (50 min / hour)
Workload:	2 hours lectures, 2 hours structural activities, 2hours individual study, 13 week per semester, total 78 hours per semester ~ 2.6 ECTS *
Credit Points:	2
Requirements:	BiochemistryI
Learning goals/competencies:	<p>General Competence(knowledge) : After following Subjects Biotechnology, students are expected to apply the basic principles of biotechnology in the field of industrial biotechnology.</p> <p>Specific Competence :</p> <ol style="list-style-type: none"> 1. Explain the definition and development of biotechnology 2. Explain the basics of fermentation 3. Explain the screening and production of primary and secondary metabolites 4. Describe the source substrate for fermentation 5. Explain the process of biotransformation 6. Applying the basic principles of biotechnology in the production of single cell protein 7. Applying the basic principles of biotechnology in wastewater treatment, 8. Applying the basic principles of biotechnology in the processing of solid waste 9. Applying the basic principles of biotechnology for bioenergy production; 10. 10. Applying the basic principles of strain development in the field of industrial biotechnology
Content:	Definition and development of biotechnology; basics of fermentation; screening and production of primary and secondary metabolites; source substrate for fermentation; biotransformation; production of single cell protein; wastewater treatment, composting, bio-energy production; and strain development.
Atribut Softskill	Team-work and good communication
Study/exam achievements:	Students are considered to be competent and pass if at least get 40% of maximum mark of the exams (UTS and UAS), structured

	<p>activities(group discussion).</p> <p>Final score (NA) is calculated as follow: 15% assignment 1 + 15% assignment 2 + 35% UTS + 35% UAS</p> <p>Final index is defined as follow:</p> <p>A : 100 > NA ≥ 75 AB : 74,99> NA ≥ 68 B : 68 > NA ≥ 60 BC : 60 > NA ≥ 55 C : 55 > NA ≥ 50 D : 5 > NA ≥ 45 E : 45 < NA</p>
Forms of Media:	Slides and LCD projectors, whiteboards
Learning methods	Lecture, assignment, and group discussion
Literature:	<ol style="list-style-type: none"> 1. Stanbury,P.F; Whitaker,A.; Hall,S.J. 2003. <i>Principles of Fermentation Technology</i>, second edition, Butterworth-Heinemann, Oxford 2. Brown,T.A., 2010, <i>Gene Cloning and DNA Analysis</i>, 6th. Edition, Blackwell Science, Ltd., Oxford 3. Smith, J.E., 2009, <i>Biotechnology</i>, 5th edition, Cambridge University Press, New York
Notes:	<p>*Total ECTS = {(total hours workload x 50 min) / 60 min } / 25 hours</p> <p>Each ECTS is equals with 25 hours</p>