

MICROBIOLOGY AND MICROBE BIOTECHNOLOGY

Module designation	<i>Microbiology and Microbe Biotechnology</i>
Semester(s) in which the module is taught	2
Person responsible for the module	1. Dr. Achmad Toto Poernomo, MSi., Apt. (Course Coordinator) 2. Prof. Dr. Achmad Syahrani, MS., Apt. 3. Suciati, MPhil., Ph.D., Apt. 4. Dr. Nuzul WD, MSi., Apt. 5. Dr. Suzana, MSi., Apt.
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	<i>Compulsory</i> / <i>elective</i> / <i>specialisation</i>
Teaching methods	<i>lecture, discussion, assignment</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: Contact hours (structured activities.): 90,67 hours Private study including independent learning activities: 90,67 hours</i>
Credit points	<i>2 SCU / 6 ECTS</i>
Required and recommended prerequisites for joining the module	NA

<p>Module objectives/intended learning outcomes</p>	<p>Students are:</p> <p>LO1: Able to realize excellence based on religious morals (excellence with morality), able to work together, and show a responsible attitude to work in their field of expertise independently.</p> <p>LO2: Able to internalize the spirit of independence, struggle, and entrepreneurship.</p> <p>LO3: Able to develop and build logical-critical-systematic-creative thinking and scientific conceptions through scientific research, design creation, or artworks of science and technology that pays attention to and applies humanities values through an interdisciplinary or multidisciplinary approach in the form of a thesis or other equivalent forms.</p> <p>LO4: Able to develop a pharmaceutical professional performance with analytical acumen in solving pharmaceutical problems and managing research in the pharmaceutical field related to national and global systems and policies, both inter and inter-disciplinary approaches.</p> <p>LO5: Able to access and review information through an Information and Communication Technology (ICT) system, decide on a specific subject of study, maintain the feasibility of implementing research designs, conduct research, analyze data, conclude research results comprehensively, and create strategic issues based on the study that reflect the latest updates in the field of pharmaceutical sciences, and communicate them in the media and scientific forums at the national and international level through an interdisciplinary or multidisciplinary approach in the form of a thesis or other equivalent forms.</p> <p>LO6: Able to make decisions in the context of solving problems related to science and technology development based on analytical or experimental studies through collaboration with colleagues, colleagues in institutions and research communities at both national and international levels and utilizing research results for the benefit of the user and other communities.</p> <p>LO11: Able to develop systems for evaluating the bioavailability of drugs in the body, pharmaceutical products circulation permits, and their in-vitro and in-vivo evaluations with specific delivery systems with appropriate analytical methods.</p> <p>LO12: Able to develop analytical methods to ensure the quality of drugs, cosmetics, foods, and beverages.</p> <p>LO14: Able to build drug management systems from active pharmaceutical ingredients to finished products that are ready for therapeutic uses.</p> <p>LO15: Able to plan and organize concepts and procedures for quality assurance and recommendations on pharmaceutical products, which include drugs, cosmetics, foods, and beverages as products and therapeutic goods.</p>
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Content	The course of Microbiology and Microbial Biotechnology provides learning topics on microbes and their products, definition and scope of biotechnology, the role of microbes in biotechnology, microbial fermentation technology and its various products
Exams and assessment formats	<i>Take-home written assignments</i>
Study and examination requirements	<i>the final grade in the module is composed of 30% discussion, 30% presentation, 30% take-home assignments, 10% in-class participation and soft-skills assessment. Students must have a final grade of 70% or higher to pass</i>
Reading list	<ol style="list-style-type: none"> 1. <i>Introduction to Pharmaceutical Biotechnology, 2018, Bathia S, Vol.1. IOP.Publishing. iopscience.iop.org.</i> 2. <i>Microbial Biotechnology. Fundamental of Applied</i> 3. <i>Microbiology, 2007, Glazer, A, Nikaido, H., 2nd Edition. Cambridge University Press. New York. www.cambridge.org/9780521842105</i> 4. <i>Principle and Application of Fermentation Technology, 2018, Arindam Kuila and Vinay Sharma, Wiley ScrivenerPublishing</i> 5. <i>Enzymes: Principles and Biotechnology, 2015, Peter K. Robinson, Portland Press Limited, Essays Biochem. (2015) 59, 1–41: doi: 10.1042/BSE0590001</i>