

	<p style="text-align: center;"><b>UNIVERSITAS PADJADJARAN</b>  <b>FACULTY OF MATHEMATICS AND</b>  <b>NATURAL SCIENCES</b></p> <p style="text-align: center;"><b>MASTER OF SCIENCE IN BIOLOGY</b></p>	<p><b>COURSE</b>  <b>CODE:</b>  <b>D20D2106</b></p>
<p>Module designation</p>	<p style="text-align: center;"><b>Microorganism Bioprospecting</b></p>	
<p>Semester(s) in which the module is taught</p>	<p style="text-align: center;">2</p>	
<p>Person(s) responsible for the module</p>	<p>1. Asri Peni Wulandari PhD., MSc.  2. Sri Rejeki Rahayuningsih Dr., MSi.</p>	
<p>Medium of instruction</p>	<p style="text-align: center;">English and Indonesian</p>	
<p>Relation to curriculum</p>	<p>Compulsory  Master of Science in Biology</p>	
<p>Teaching methods</p>	<p style="text-align: center;">Lecture, Discussion, Cooperative Learning and Problem Based Learning</p>	
<p>Workload</p>	<p>Total workload: 8160 minutes (90,67 hours)</p> <p><b>CLASS</b></p> <p>Lecture, Discussion, Cooperative Learning and Problem Based Learning:  2 x 50'x 16 weeks = 1600 minutes (26.67 hours)</p> <p>Exercise : 2 x 60'x 16 weeks = 1920 minutes  (32 hours)</p> <p>Private study : 2 x 60'x 16 weeks = 1920 minutes  (32 hours)</p>	
<p>Credit points</p>	<p style="text-align: center;">2.00 SKS (3.62 ECTS)</p>	

Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> <li>1. After completing this course, the students will be able to understand the potential of microorganisms, including knowledge of their physiology, characteristics, and improvement for industry.</li> <li>2. After completing this course, the students will be able to understand metabolic pathways, primary and secondary metabolite production, enhance product yields using traditional fermentation and genetic engineering, as well as apply microorganisms in small-scale or home-based industries as well as large-scale industries.</li> <li>3. After completing this course, the students will be able to apply microorganisms for waste management and pollution control.</li> </ol>
Contents	<p>This course covers: the scope and history of bioprospecting; the definition of bioprospecting and biopiracy; examples of microorganism bioprospecting; potential patentable microorganism bioprospecting; global and national conventions on biodiversity and ecological bioprospecting; microorganism biodiversity; road map for microorganism bioprospecting; activities and strategies of bioprospecting using biotechnology, including isolation, screening, and optimization of cultivation and production; potential products resulting from microorganism bioprospecting in biopreneurship.</p>
Examination forms	Essay and written examination
Study and examination requirements	<p>Minimum attendance at lectures is 80%. Final score is evaluated based on assignment and group case study reports (20%), Assignment (20%), mid semester exam (30%), and end semester exam (30%).</p>
Reading lists	<ol style="list-style-type: none"> <li>1. Paterson, R., &amp; Lima, N. (Eds.). (2016). <i>Bioprospecting: Success, Potential and Constraints</i> (Vol. 16). Springer.</li> <li>2. Mateo, N., Nader, W., &amp; Tamayo, G. (2001). Bioprospecting. <i>Encyclopedia of biodiversity</i>, 1, 471-487.</li> <li>3. Goodfellow, M., &amp; Fiedler, H. P. (2010). A guide to successful bioprospecting: informed by actinobacterial systematics. <i>Antonie Van Leeuwenhoek</i>, 98(2), 119-142.</li> <li>4. Najjari, A., Cherif, A., Sghaier, H., &amp; Ouzari, H. I. (Eds.). (2021). <i>Extremophilic microbes and metabolites: diversity, bioprospecting and biotechnological applications</i>. BoD–Books on Demand.</li> </ol>