

Module Handbook

Module designation	<i>Microtechnique (course code MPB 2218)</i>
Semester(s) in which the module is taught	4
Person responsible for the module	<i>Ari Hepi Yanti, S.Si, M.Sc, Mukarlina, S.Si, M.Si, Dr.Dwi Gusmalawati, S.Si, M.Si &amp; Diah Wulandari Rousdy, S.Si, M.Sc.</i>
Language	<i>Indonesian</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>lecture and lab works</i>
Workload (incl. contact hours, self-study hours)	<p><i>(Estimated) Total workload: 170 minutes x 3 units x 16 = 8,160 minutes (136 hours)</i></p> <p><i>Contact hours (please specify whether lecture, exercise, laboratory session, etc.):</i></p> <p><i>lecture: every Wednesday, 09:30 – 11:10</i></p> <p><i>laboratory session: Thursday, 12:30 - 15:30</i></p> <p><i>Practical work in laboratory: 170 minutes x 1 unit x 16 session = 2,720 minutes (45 hours)</i></p>
Credit points	<i>3 units</i>
Required and recommended prerequisites for joining the module	<i>Plant Morphology and Anatomy (MPB 1204), Animal Anatomy (MPB 1205) &amp; Histology (MPB 2110)</i>

<p>Module objectives/intended learning outcomes</p>	<p><b>Knowledge (ILO-2)</b> : Mastering and being able to apply biological science and other scientific fields that support the development of biological science .</p> <p><b>General Skill (ILO- 3)</b> : Able to work in teams and communicate actively orally and in writing in the field of biological sciences.</p> <p><b>Specific Skill (ILO-5)</b>: Able to plan, solve problems and provide recommendations for sustainable management of tropical wetland resources</p> <p><b>Specific Skill (ILO-6)</b>: Mastering biological instruments and methodologies and being able to apply them in the management of tropical wetland resources .</p>
<p>Content</p>	<p><i>Microtechniques courses study the definition and relationship of microtechniques with other branches of biology, animal and plant cells and tissues, methods for making animal and plant preparations, paraffin methods: stages of fixation of animal and plant tissue, stages of dehydration, infiltration, sectioning and embedding, paraffin method: stages of coloring and mounting animal and plant tissue, obstacles in making preparations using the paraffin method, special techniques for making animal and plant preparations and micrometry</i></p>
<p>Examination forms</p>	<p><i>Written test</i></p>
<p>Study and examination requirements</p>	<p><i>Re-registration and 75% attendance.</i></p>

Reading list	<ol style="list-style-type: none"><li>1) Bancroft, JD &amp; Cool, HC, 1984, <i>Manual of Histological techniques</i>, Longman Singapore publishers, Pte Ltd, Singapore</li><li>2) Ruzin, SE, 1999, <i>Plant Microtechnique and Microscopy</i>, Oxford University.</li><li>3) Sass, JE, 2023, <i>Botanical Microtechnique</i>, Creative Media Partners LLC, Wyoming, USA.</li><li>4) Kingsburry, BF, 2008, <i>Histological Technique - A Guide For Use In A Laboratory Course In Histology</i> Kingsburry Press, London.</li><li>5) <a href="http://www.microscopyu.com/microscopy/basics/linear/measurement.micrometry">www.microscopyu.com/microscopy/basics/linear/measurement.micrometry</a></li></ol>
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