



# THE MODULE HANDBOOK

DEPARTMENT OF BIOLOGY  
FACULTY OF SAINS AND MATHEMATICS  
DIPONEGORO UNIVERSITY

## PLANT TISSUE CULTURE

1. Module designation	PLANT TISSUE CULTURE
2. Semester(s) in which the module is taught	5 <sup>th</sup> semester of program studi Biologi
3. Person responsible for the module	Dr. Yulita Nurcahayati, M.Si Dr. Nintya Setiari, M.Si
4. Language	Indonesia
5. Relation to curriculum	Elective
6. Teaching methods	lecture, lesson, small project
7. Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 100 minutes Contact hours (lecture and exercise) 2 hours (, assignment.) 2 hours private study including examination preparation,
8. Credit points	2 sks
9. Required and recommended prerequisites for joining the module	Plant Anatomy Plant Physiology
10. Module objectives/intended learning outcomes	<ol style="list-style-type: none"><li>1. Mastering the cell theory that underlies the science of plant tissue culture</li><li>2. Sensitive to problems in tissue culture</li><li>3. Identify and develop the potential of biological natural resources related to the provision of uniform superior plant seeds</li><li>4. Designing research on the use of tissue culture techniques for the production of plant secondary metabolites as well as for screening stress-resistant plants that are oriented in the scope of optimization, diversification and conservation to improve community welfare</li></ol>



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11. Content	Plant Tissue Culture is a course that examines the introduction of tissue culture tools and laboratories, sterilization techniques and the concept of aseptic plant tissue cultivation in culture bottles, manufacture of culture media and various culture techniques ranging from cells, tissues and organs, the application is based on biotechnology through embryo formation. somatic. and artificial seeds. Students can also study the development of KJT as a secondary metabolite production technique and screening of stress-resistant plants for methods of solving environmental problems.															
12. Exams and assessment formats	e.g. one official mid semester exam (90 minutes) and one official final oral exam (90 minutes), one take-home written assignments															
13. Study and examination requirements	<p>Requirements for successfully passing the module e.g. the mid semester exam grade in the module is composed of 25% performance on exams, the final exam is 25%. take-home assignments, 50% Students must have a final grade of 70% or higher to pass</p> <table border="1" data-bbox="662 961 1242 1213"> <thead> <tr> <th>Value Range</th> <th>Value Range</th> <th>Value Weight</th> </tr> </thead> <tbody> <tr> <td>≥ 80</td> <td>A</td> <td>4,00</td> </tr> <tr> <td>≥ 70 - 79</td> <td>B</td> <td>3,00</td> </tr> <tr> <td>≥ 60 - 69</td> <td>C</td> <td>2,00</td> </tr> <tr> <td>≤ 59</td> <td>D</td> <td>1,00</td> </tr> </tbody> </table>	Value Range	Value Range	Value Weight	≥ 80	A	4,00	≥ 70 - 79	B	3,00	≥ 60 - 69	C	2,00	≤ 59	D	1,00
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14. Reading list	<ol style="list-style-type: none"> <li>1. Chawla, H.S. 2003. Plant Biotechnology Laboratory Manual for Plant Biotechnology. Oxford &amp; IBH Publishing, New Dehli.</li> <li>2. Dwiyani, R. Kultur Jaringan Tanaman. Pelawa Sari . Denpasar Bali.</li> <li>3. Gamborg, O.L. and G.C Phillips. 1995. Plant Cell, Tissue and Organ culture. Springer, Berlin.</li> <li>4. George,E.F., M.A. Hall&amp; G-J. De Klerk. (Eds.). 2008. Plant Propagation by Tissue Culture. 3<sup>rd</sup> Ed. Vol. 1. The Background. Springer-Verlag. The Netherlands</li> <li>5. Neumann,K-H., A. Kumar &amp; J.Imani. 2009. Plant Cell and Tissue Culture - A Tool in Biotechnology. Basics and Application. Springer-Verlag Berlin Heidelberg</li> </ol>															