



**THE MODULE HANDBOOK**  
**FACULTY OF BIOLOGY**  
**MASTER PROGRAMME**

**FUNDAMENTALS OF IN VITRO CULTURE TECHNIQUES**

<b>Module code</b>	BIO-60202
<b>Module level</b>	1 <sup>st</sup> year of Master Program in Biology
<b>Abbreviation, if applicable</b>	-
<b>Courses related</b>	-
<b>Semester</b>	Odd
<b>Course coordinator(s)</b>	Dr. Endang Semiarti, M.S., M.Sc.
<b>Lecture(s)</b>	1. Dr. Endang Semiarti, M.S., M.Sc. 2. Dr.rer.nat. Ari Indrianto, SU
<b>Language</b>	Bahasa Indonesia and English
<b>Classification within the Curriculum</b>	Compulsory Courses for Specific Field of Interest
<b>Teaching format/class hours per week during the semester</b>	This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination. This course also has laboratory works credits.
<b>Workload</b>	Estimated working hour: 10,5 hours/week.
<b>Credit</b>	2-1 credits
<b>Requirements</b>	-
<b>Course Learning Outcome</b>	1. Able to plan and design plant tissue culture experiments
<b>Syllabus</b>	In Fundamentals of Vitro Culture Course explain the basic principles of plant tissue culture and principles that are used as the basis for implementing tissue culture techniques. Principles of laboratory equipment and technical equipment for tissue culture, various kinds of tissue culture medium, aseptic working principles, and explaining the need for various types of tissue culture based on research objectives and types of plant materials used: callus and cell suspension cultures, isolation, fusion and protoplast culture, microspores embryogenesis, micropropagation / cloning. Added an explanation of the molecular basis of plant development and the latest developments in research on plant tissue culture.
<b>Study/exam achievements</b>	a. Midterm: 30% b. Final examination: 50% c. Quiz: 5% d. Homework: 15%
<b>Forms of media</b>	White board, notebook, LCD
<b>Reference</b>	1. George, E.F. and P.D. Sherrington. 1984. Plant Propagation by Tissue Culture. Hanbook and



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- Directory of Commercial Laboratories. Exergetics Ltd. Eversley, Basingtoke, Hants. England.
  2. Stein, J.R. 1973. Handbook of Phycological Methods. Cambridge University Press. Cambridge. United Kingdom.
  3. Howell, S. 1998. Molecular genetic of Plant Development. Cambridge Univ. Press., Cambridge.
  4. Becker, W.E. 1995. Mikroalgae : biotechnology and microbiology. Cambridge University Press. New York. USA
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