MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE:** **D10D-60104**
Module designation	Plant Microtehnics	
Semester(s) in which the module is taught	6	
Person(s) responsible for the module	1. Dr. Mohamad Nurzaman 2. Dr. Tia Setiawati 3. Ruly Budiono, Drs. 4. Dr. Asep Zaenal Muttaqien	
Medium of instruction	Indonesian	
Relation to curriculum	Elective course	
Teaching methods	Lectures, discussions, cooperative learning, Project-based Learning and inquiry learning	
Workload	Total workload : 5440 minutes = 90.67 hours Lectures, discussions, cooperative learning, and inquiry learning : 2 x 50 minutes x 16 weeks = 1600 minutes = 26.67 hours Exercises : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours Self-study : 2 x 60 minutes x 16 weeks = 1920 minutes = 32 hours	
Credit points	2,00 (3,62 ECTS)	
Required and recommended prerequisites for joining the module	-	
Module objectives/intended learning outcomes	1. Explain the basic concepts of the objectives and scope of plant microtechniques. 2. Explain the principles of selecting and sampling plant tissue. 3. Explain the functions and working principles of fixatives in plant microtechniques. 4. Perform a multi-stage dehydration and clarification process using organic solvents. 5. Performing tissue embedding into paraffin blocks using the appropriate technique. 6. Operating a microtome to produce thin and uniform sections. 7. Analyzing staining results based on sharpness contrast and color selectivity. 8. Analyzing common errors in mounting and their effect on the quality of the preparation. 9. Evaluating the accuracy of the interpretation of microtechnical results for research or identification purposes.	
Contents	Explain theoretically and practically about the stages of how to prepare organs, tissues or tissue parts to be observed and examined which include sources of material, sources of tissues and organs, stages of fixation, washing, dehydration, seeding, infiltration, embedding, cutting, sticking and staining.	
Examination forms	Quiz, midterm exam, assignment, and final exam	
Study and examination requirements	The minimum attendance in lectures is 80%. Final grades are evaluated based on quiz (10%), midterm exam (15%), assignment (10%), final exam (15%), project and participation (50%)	
Reading lists	1. Yeung, E. C., Ruzin, S. E., & Dute, R. L. B. (1993). Plant microtechnique and microscopy. xford University Press. 2. Johansen, D. A. (1940). Botanical microtechnique (1st ed.). McGraw-Hill Book Company. 3. Esau, K. (1965). Plant anatomy (3rd ed.). McGraw-Hill. 4. Roberts, K. (Ed.). (2007). Handbook of plant science (2nd ed.). Wiley-Interscience. 5. Kiernan, J. A. (2008). Histological and histochemical methods: Theory and practice (4th ed.). Scion Publishing. 6. Sauffer, S. G. (2020). *Plant microtechnique and microscopy*. Oxford University Press. 7. Mauseth, J. D. (2019). *Plant microtechnique manual*. Jones & Bartlett Learning.	