



UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND SCIENCE
DEPARTMENT OF BIOLOGY EDUCATION

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Bachelor of Science in Biology

MODULE HANDBOOK

Module name:	Laboratory Work in Ichthyology
Module level, if applicable:	Undergraduate
Code:	BIM 6153
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	Odd
Module coordinator:	Rizka Apriani Putri, M.Sc
Lecturer(s):	Rizka Apriani Putri, M.Sc
Language:	Bahasa Indonesia
Classification within the curriculum:	Elective Course
Teaching format / class hours per week during the semester:	100 minutes labwork, 120 minutes structured activities, and 120 minutes individual study per week
Workload:	Total workload is 91 hours per semester which consists of 100 minutes practicum, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	1SKS (1 ECTS)
Prerequisites course(s):	General Biology , Vertebrate Biology, Laboratory Work in Vertebrate Biology
Program Learning Outcomes	<p>PLO 4. Comprehensively mastering Biology (core biology) to solve problems in the field of Biology (problem-solving) and to underlie the concepts of related sciences</p> <p>PLO 5. Mastering the techniques and methodologies in Biology as well as familiar with the equipment used in Biology laboratories in order to get the knowledge of Biology (how we</p>

	<p>know what we know)</p> <p>PLO 6. Being adaptive, creative, innovative in applying the concepts of Biology and other related fields</p> <p>PLO 7. Being skillful in applying the techniques used in laboratories and daily life</p> <p>PLO 9. Being able to work and create jobs/being an entrepreneur in the field of Biology</p> <p>PLO 10. Having managerial ability to supervise and evaluate workers and optimizing the networks in order to develop professionalism</p> <p>PLO 11. Possessing scientific skills to support the ability to speak in local, national, and international forums</p>																				
Course Outcomes	<p>After taking this course, the students have ability to:</p> <p>CO 1. Master the anatomy and morphology of fish</p> <p>CO 2. Identify fish species based on its morphological and meristic characteristics</p> <p>CO 3. Apply the technique of fish species identification based on morphological characteristics in field and publish the data in form of poster/ report / paper.</p>																				
Content:	<p>This lab work provides opportunities for student to study the diversity, anatomy and morphology of fish. Students will also learn how to identify fish species based on their morphological and meristic characteristics.</p>																				
Study / exam achievements:	<p>The final mark will be weight as follow:</p> <table border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO1 to CO3</td> <td>Observed attitudes , knolwedge, and skills</td> <td>Survey, test, rubrics and manuals</td> <td>60%</td> </tr> <tr> <td>2</td> <td>Review session</td> <td></td> <td></td> <td>40%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1 to CO3	Observed attitudes , knolwedge, and skills	Survey, test, rubrics and manuals	60%	2	Review session			40%	Total				100%
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2	Review session			40%																	
Total				100%																	
Forms of media:	Real objects, model and simulation, multimedia																				
Reference:	A. Bone, Q and R.H Moore, 2008, Biology of Fishes 3rd Ed., Taylor and Francis Group																				

	<p>B. Hastings, P.A., H.J Walker Jr., and G.R Galland, 2014, Fishes : A Guide to Their Diversity, University of California Press</p> <p>C. Nelson, J.S., T.C. Grande, M.V.H Wilson,2016, Fishes of The World 5th Ed., John Wiley and Sons, New Jersey</p> <p>D. De Iuliis, G., and D. Pulera, 2007, The Dissection of Vertebrates – A Laboratory Manual, Academic Press, London</p>
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PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11
CO1				✓	✓						✓
CO2				✓	✓						✓
CO3				✓	✓	✓	✓		✓	✓	✓