



UNIVERSITI TEKNOLOGI MARA

BDY632: ICHTHYOLOGY

Course Name (English)	ICHTHYOLOGY APPROVED
Course Code	BDY632
MQF Credit	3
Course Description	This course will provide the student with knowledge of fish and its ecology and adaptation. For practical aspect, student will introduced with method of ichthyology dealing with how to survey fish's population. Student will involve in field research project and will get familiar with the methods used and the nature. After being introduced by theory and practical of ichthyology, students will be introduced with the variety of fish's populations and the revolution history of fishes.
Transferable Skills	From this course, student will be able to: 1. Identify species of fishes 2. Apply knowledge when conducting ichthyology research.
Teaching Methodologies	Lectures, Lab Work, Field Trip, Presentation
CLO	CLO1 Describe the evolutionary history and taxonomic diversity and fishes CLO2 Recognize the basic physiological and behavioral adaptations that fishes use to carry out their life cycle CLO3 Collect and identify local fish species CLO4 Apply their knowledge to some of the quantitative techniques used in describing fish morphology and fish behavior, and reinforce concepts of experimental design and hypothesis testing
Pre-Requisite Courses	No course recommendations
Topics	
1. The science of ichthyology 1.1) N/A	
2. Forms and function of fish 2.1) External anatomy of fish 2.2) Body form and function	
3. Oxygen, metabolism and energetic 3.1) N/A	
4. Sensory systems 4.1) N/A	
5. Homeostasis 5.1) N/A	
6. Functional morphology of locomotion and feeling 6.1) N/A	
7. Taxonomy, phylogeny and evolution 7.1) Vertebrate ancestry 7.2) Fish evolution	
8. Living representative of primitive fishes 8.1) N/A	
9. Zoogeography 9.1) Zoogeographic regions 9.2) Freshwater versus marine 9.3) Distributions and causal factors 9.4) Centers of speciation and refugia	

10. Fish genetics 10.1) Basic genetics 10.2) Mendelian inheritance 10.3) Typical application 10.4) Hybridization 10.5) Sex determination
11. Behavior and ecology 11.1) Migration 11.2) Feeding 11.3) Competition and predation 11.4) Symbiosis, parasites and pathogen
12. Individuals, populations and assemblages 12.1) N/A
13. Communities, ecosystems and the functional role of fishes 13.1) N/A
14. The future of fishes 14.1) N/A

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Oral Test	Class dialogues	5%	CLO1
	Oral Test	Field dialogues	5%	CLO4
	Practical	Procedural skills	5%	CLO3
	Test	Test 1	15%	CLO2
	Test	Test 2	15%	CLO4
	Written Report	Field report	5%	CLO2

Reading List	<p>Recommended Text</p> <ul style="list-style-type: none"> • Helfman, G. S.. 2009, <i>The diversity of fishes: biology, evolution, and ecology</i>, John Wiley and Sons • Kapoor, B.G. and Khanna, B. 2004, <i>Ichthyology handbook</i>, Springer • Lagler, K.F. 1977, <i>Ichthyology</i>, John Wiley and Sons • Paxton, J.R. and Eschmeyer, W.N. 1998, <i>Encyclopedia of fishes</i>, Academic Press • Books, L. L. C. 2010, <i>List of Freshwater Aquarium Fish Species, Shark, Live- Bearing Aquarium Fish, Deep Sea Fish, Shoaling and Schooling, Fishkeeping</i>
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources