UNIVERSITI TEKNOLOGI MARA

BIO330: INTRODUCTION TO ECOLOGY

Course Name (English)	INTRODUCTION TO ECOLOGY APPROVED
Course Code	BIO330
MQF Credit	3
Course Description	This subject focuses on the biological concepts and interactions in population, community and ecosystem ecology. This course will also emphasize on the environmental issues, conservation and the characterization of terrestrial and aquatic ecosystems
Transferable Skills	Scientific writing skill, conducting experiment, knowledge, communication skill
Teaching Methodologies	Lectures, Lab Work, Field Trip, Collaborative Learning
CLO	CLO1 Explain biological concepts of ecology, environmental issues and conservation CLO2 Perform (plan, conduct and analyze outcomes of) scientific investigations in the area of ecology CLO3 Demonstrate good interaction between team members in reaching the objective on completing tasks related to biological concepts of ecology, environmental issues and conservation
Pre-Requisite Courses	No course recommendations

Topics
1. Introduction to ecology 1.1) Biotic factors 1.2) Abiotic factors 1.3) Subfields of ecology
2. Population ecology 2.1) Population dynamics, density and dispersion 2.2) Exponential growth model and factors that regulate the growth (intrinsic rate of increase) 2.3) Logistic growth model and the concept of carrying capacity 2.4) Density dependent factors and density independent factors 2.5) Demography
3. Community ecology 3.1) Community interactions 3.2) Features of community structure 3.3) Ecological succession
4. Ecosystem ecology 4.1) Producers, consumers and decomposers 4.2) Heterotrophic nutrition - omnivores, herbivores and carnivores 4.3) Energy flow in ecosystem 4.4) Concepts of energy transfer 4.5) Ecological pyramids 4.6) Biogeochemical cycle
5. Environmental issues and conservation 5.1) Air pollution 5.2) Water pollution 5.3) Deforestation 5.4) Climate change 5.5) Pesticides and bio-magnification 5.6) Endangered and introduced species 5.7) Biological control 5.8) In situ and ex situ conservation

6. Terrestrial ecosystem 6.1) Biomes
7. Aquatic ecosystem 7.1) Freshwater ecosystem (rivers, lakes, wetlands, estuaries) 7.2) Marine ecosystem
8. Field Work 8.1) n/a
9. Test 9.1) Test 1 & 2

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Lab Exercise	Lab Report	20%	CLO2
Presentation	Online Presentation	20%	CLO3
Test	Online Test	20%	CLO1

Reading List

Reference Book Resources

- **Campbell, N.A. and Reece, J.B. 2011, *Biology*., 9 Ed., Pearson Education USA [ISBN: 0321739752]**
- **Solomon, E.P., Berg, L.R., & Martin, D.W. 2011, *Biology*, 9 Ed., Thomson Learning Inc USA**
- **Campbell, N.A., Mitchell, L.G. and Reece, J.B. 2000, *Concepts and Connections with On-line Lab*, 3 Ed., Benjamin/Cummings USA**
- **Clegg, C. J., Mackean, D.G. 1994, *Advanced Biology: Principles and Applications*, John Murray (Publishers) Ltd**
- **Green, N.P.O., Stout, G.W., Taylor, D.J. 1998, *Biological Sciences*, 3 Ed., Cambridge University Press**
- **Raven, P.H., Johnson, G.B. 1995, *Volume II, Understanding Biology*, 3 Ed., WCB**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources