



UNIVERSITI TEKNOLOGI MARA

BIO631: Special Topics in Biology

Course Name (English)	Special Topics in Biology APPROVED
Course Code	BIO631
MQF Credit	2
Course Description	This course offers in-depth exploration of a selected topic, issue or trend in biological sciences, including specific studies in genetics, physiology and the environment. Students will be able to familiarize themselves with a variety of current and emerging topics in biological research. They will also be provided with an understanding of the interaction between science and society using a scientific, inquiry-based approach. Students will be encouraged to actively participate in discussions and presentations so as to acquire skills needed for their professional life.
Transferable Skills	Communication, teamwork and leadership Problem solving and scientific reasoning Information management and life-long learning
Teaching Methodologies	Discussion, Presentation, Self-directed Learning, Journal/Article Critique
CLO	CLO1 Demonstrate teamwork through information analysis related to selected topics in biology CLO2 Designate working paper with regards to scientific skills CLO3 Present on selected topics in biology implication for society as well as future emerging trends
Pre-Requisite Courses	No course recommendations
Topics	
1. 1.0 Introduction 1.1) 1.1 Science and society	
2. 2.0 Genomes and society 2.1) 2.1 Basic ideas of genomics 2.2) 2.2 Genomics and society 2.3) 2.3 Current and emerging trends in genomic	
3. 3.0 Virology 3.1) 3.1 Infectious diseases caused by selected viruses 3.2) 3.2 Epidemiology of diseases 3.3) 3.3 Current and emerging trends on viruses	
4. 4.0 Immunology 4.1) 4.1 Autoimmune diseases 4.2) 4.2 Immunodeficiency 4.3) 4.3 Cancer 4.4) 4.4 Hypersensitivity reactions 4.5) 4.5 Transplantation 4.6) 4.6 Current and emerging trends on immunological treatment	
5. 5.0 Physiology of the Extreme 5.1) 5.1 Physiological adaptations in mammals 5.2) 5.2 Human Response to physiological stress 5.3) 5.3 Current and emerging trends in extreme physiology	
6. 6.0 Radiation and its effect 6.1) 6.1 Biological effects of radiation 6.2) 6.2 Nuclear accidents and their implications 6.3) 6.3 Current and emerging trends in radiation science	

7. Presentation

7.1) Genomes and society, virology, immunology, physiology of the extreme or radiation and its effect.

8. Poster/Infographic Design

8.1) design a poster/infographic to summarize the article either on genomes and society, virology, immunology, physiology of the extreme or radiation and its effect

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Peer review (to use google form) at the end of the course. Refer to the rubric assignment 4 peer review.	10%	CLO1
	Assignment	Based on the same article submitted for Assignment 1, design a poster/infographic to summarize the article according to the given structured questions in the rubric assignment 2 poster	30%	CLO2
	Journal/Article Critique	Find a suitable recent published original article (less than 5 years) on either one of the following topics: Genomes and society, virology, immunology, physiology of the extreme or radiation and its effect. Discuss the key points of the selected article based on the given structured questions in rubric assignment 1 report	30%	CLO2
	Presentation	Present orally or record your presentation on the prepared poster/infographic according to the given rubric assignment 3 video presentation	30%	CLO3

Reading List	Recommended Text	<ul style="list-style-type: none"> Dhavendra Kumar and Ruth Chadwick 2015, <i>Genomics and Society: Ethical, Legal, Cultural and Socioeconomic Implications</i> 1 Ed., Academic Press US Paul Hyman and Stephen T. Abedon 2018, <i>Viruses of Microorganisms</i>, 1 Ed., Caister Academic Press [ISBN: 978-1-910190] Hanns-Christian Gunga 2014, <i>Human Physiology in Extreme Environments</i>, Elsevier [ISBN: 9780123869982]
Article/Paper List	Recommended Article/Paper Resources	<ul style="list-style-type: none"> Kurnick, James & Pandolfi, Franco & Pawelec, Graham 2013, Current Challenges in Immunology, <i>International Trends in immunity</i>, 1, 9
Other References	<ul style="list-style-type: none"> WEBSITE <i>Nature Immunology Reviews</i>, nature https://www.nature.com/nri/subscribe?coupon=nat50q219&end_date=30/09/2019&amp:gclid=EAlalQobChMI7IPNu-iD4wIVAT5gCh2kPAJ0EAAAYASAAEgLGPPD_BwE 	