



UNIVERSITI TEKNOLOGI MARA

SPS180: INTRODUCTION TO EXERCISE PHYSIOLOGY

Course Name (English)	INTRODUCTION TO EXERCISE PHYSIOLOGY APPROVED
Course Code	SPS180
MQF Credit	3
Course Description	This course examines acute changes and chronic adaptation of human body systems (cardiovascular, respiratory, muscular, energy metabolism) following exercise which encompasses of theory and practical aspects. Health aspect of exercise is also discussed. This course exposes students to the fundamental of exercise physiology which enhance and improve health and fitness. This course is essential to students pursuing degree in exercise science.
Transferable Skills	Able to work on your own and as a team Able to communicate Able to practice good research ethics Able to evaluate data collection from laboratory test
Teaching Methodologies	Lectures, Lab Work, Demonstrations, Practical Classes, Discussion, Presentation, Self-directed Learning
CLO	CLO1 Explain the interrelation between exercise metabolism, body systems (metabolic, cardiovascular, respiratory, muscular, and endocrine) related to responses and adaptations to exercise. CLO2 Perform scientific investigation of physiological and physical performance pertaining to sports performance and maintaining healthy life style. CLO3 Analyze the exercise physiology issues and problems in assisting to provide scientific and practical solution improving exercise performance and quality of life
Pre-Requisite Courses	No course recommendations
Topics	
1. Basic energy system 1.1) 1.1 Introduction to energy system 1.2) 1.2 Energy Sources- Carbohydrate, protein, & Fat 1.3) 1.3 ATP-PCr System, Glycolytic System, Oxidative System	
2. Physiological changes during aerobic and anaerobic exercise 2.1) 2.1 Respiratory response 2.2) 2.2 Cardiovascular response 2.3) 2.3 Metabolic response	
3. Physiological adaptation during aerobic and anaerobic exercise 3.1) 3.1 Respiratory adaptation 3.2) 3.2 Cardiovascular adaptation 3.3) 3.3 Metabolic adaptation	
4. Neuromuscular functions and fatigue and exercise 4.1) 4.1 Muscle fiber type 4.2) 4.2 Recruitment of muscle fiber 4.3) 4.3 Types and phases of muscle contraction 4.4) 4.4 Fatigue	

5. Hormonal control and responses to exercise

- 5.1) 5.1 Hormone receptor interaction
- 5.2) 5.2 Factors affecting hormones
- 5.3) 5.3 Hormonal control of substrate mobilization
- 5.4) 5.4 Hormones and muscle functions
- 5.5) 5.5 Hormonal effects on fluid and electrolyte balance
- 5.6) 5.6 Buffer system

6. Lab

- 6.1) Lab 1-4

7. Issues

- 7.1) 1-5

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment based on issues analysis	10%	CLO3
	Lab Exercise	Lab Report	10%	CLO2
	Practical	Lab work	20%	CLO2
	Test	Test 2	16%	CLO1
	Test	Test 3	20%	CLO1
	Test	Test 1	24%	CLO1

Reading List	Recommended Text
	William Beam, Gene Adams 2007, <i>Exercise Physiology Laboratory Manual</i> , 5 Ed., McGraw-Hill Humanities/Social Sciences/Languages [ISBN: 9780072972931]

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

Other References
<ul style="list-style-type: none"> • Text book Powers, S.K. & Howley 2007, <i>Exercise Physiology, theory and application to fitness and performance</i>, McGraw Hill, Dubuque • Text book McArdle W.D., Katch, F.I & Katch, V.L 2006, <i>Exercise Physiology: Energy, nutrition and human performance</i>, Lippincott William & Wilkins, Philadelphia