



UNIVERSITI TEKNOLOGI MARA

SPS742: SPORTS PHYSIOLOGY

Course Name (English)	SPORTS PHYSIOLOGY APPROVED
Course Code	SPS742
MQF Credit	3
Course Description	The course content is concentrated on the acute and chronic effects of exercise on metabolic processes, cardiovascular and respiratory systems, neuromuscular functions and endocrine systems. The role of these processes in limiting exercise performance will be discussed. Students are also exposed to in depth understanding of the physiological and scientific bases of human performance and the influence of sport and exercise on health. This advanced course also study at a high level in the related areas with emphasis on research literature and reviews in exercise physiology.
Transferable Skills	1. able working to deadlines 2. management and leadership 3. able to make decisions 4. Written communications 5. Communicate verbally
Teaching Methodologies	Lectures, Lab Work, Demonstrations, Reading Activity, Discussion, Presentation, Directed Self-learning , Journal/Article Critique
CLO	CLO1 Describe the individual and integrated concepts of physiological responses to chronic training. CLO2 Perform scientific investigation of physiological and physical performance pertaining to sports performance. CLO3 Discourse the governing principle based upon the synthesis of current research articles related to exercise and sport physiology.
Pre-Requisite Courses	No course recommendations
Topics	
1. 1. Energy Transfer in Exercise 1.1) 1. Energy Transfer in Exercise 1.2) 1.1 ATP-PC system 1.3) 1.2 Lactic acid system 1.4) 1.3 Aerobic system 1.5) 1.4 Oxygen deficit 1.6) 1.5 Maximum oxygen consumption 1.7) 1.6 EPOC for exercise	
2. 2. Muscular Function and Adaptation to exercise 2.1) 2. Muscular Function and Adaptation to exercise 2.2) 2.1 Excitation-Contraction Coupling 2.3) 2.2 Muscular Adaptations to Aerobic Training 2.4) 2.3 Muscular Adaptations to Anaerobic Training 2.5) 2.4 Neuromuscular Adaptations to Resistance Training 2.6) 2.5 Muscle Soreness and Performance	
3. 3. Hormonal Regulation of Exercise 3.1) 3. Hormonal Regulation of Exercise 3.2) 3.1 Resting and exercise-induced endocrine secretion 3.3) 3.2 Hormonal control of substrate mobilization during 3.4) exercise 3.5) 3.3 Exercise and immune response	

4. 4. Determinants of Pulmonary Ventilation and Exercise

- 4.1) 4. Determinants of Pulmonary Ventilation and Exercise
- 4.2) 4.1 Regulation of pulmonary ventilation.
- 4.3) 4.2 Acute and chronic effects of exercise-induced on
- 4.4) lung volumes and lung capacity
- 4.5) 4.3 Respiratory limitations to performance

5. 5. Cardiovascular Adaptations

- 5.1) 5. Cardiovascular Adaptations
- 5.2) 5.1 Events in Cardiac Cycle
- 5.3) 5.2 Transition from rest to exercise

6. 6. Exercise Recovery

- 6.1) 6. Exercise Recovery
- 6.2) 6.1 Fatigue and Residual Soreness
- 6.3) 6.2 DOMS
- 6.4) 6.3 Metabolic responses during recovery
- 6.5) 6.4 Substrate During Recovery

7. 7. Exercise and Environmental Stress

- 7.1) 7. Exercise and Environmental Stress
- 7.2) 7.1 Physiological responses and adaptation to exercise in
- 7.3) the heat
- 7.4) 7.2 Physiological responses and adaptation to exercise at
- 7.5) altitude

8. 8. Exercise, Free Radicals and Antioxidant

- 8.1) 8. Exercise, Free Radicals and Antioxidant
- 8.2) 8.1 Free radical
- 8.3) 8.2 Oxidative stress
- 8.4) 8.3 Antioxidant
- 8.5) 8.4 Oxidative Stress and Exercise

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Lab Exercise	Lab Report	10%	CLO2
	Practical	Practical Test	20%	CLO2
	Presentation	Journal Article Review	30%	CLO3
	Test	Test 1	20%	CLO1
	Test	Test 2	20%	CLO1

Reading List	Recommended Text	<ul style="list-style-type: none"> William D.. McArdle, Franck I.. Katch, Victor L.. Katch 2014, <i>Exercise Physiology</i>, 8th Ed., LWW [ISBN: 9781451193831] Physiology of Sport and Exercise, Fourth Edition 2007, <i>Physiology of Sport and Exercise</i>, 4th Ed., Human Kinetics [ISBN: 0736055835]
	Reference Book Resources	<ul style="list-style-type: none"> Scott Powers, Edward Howley 2014, <i>Exercise Physiology: Theory and Application to Fitness and Performance</i>, 9th Ed., McGraw-Hill Humanities/Social Sciences/Languages [ISBN: 0073523534]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	