**University: kafr el sheikh**

**Faculty of Physical Therapy**

**Course Specifications 2016 -2015**

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| 1. **Basic Information:** | | |
| Code No.: PT217 | Course Title: exercise Physiology | **Academic Level:** **2nd Year S2** |
| **Teaching Hours:** Lecture: 2 H/W LAB: - H/W Total: 2H/W | | Specialization: Bachelor of Physical Therapy |

**Summary of the main learning outcomes for students enrolled in the course:**

This course provides the students a fundamental knowledge of the acute and chronic responses to exercise. Particular attention will be placed upon understanding the mechanisms of how these responses occur. The course begins with an introduction and definition of some terms related to performance. Then overview of bioenergetics and metabolism. The class then enters into the specific areas of endocrinology, neuromuscular, circulatory and respiratory exercise physiology. Finally the class explores environmental exercise physiology, training and performance. The overriding concept throughout the course will be how the body attempts to maintain “homeostasis” in light of the disturbance caused by exercise.

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| 1. **Aims:**   By successful completion of the course the student should be able to:   * + Describe and understand the general physiological responses to exercise   + Describe and understand the responses of the major physiological systems to exercise   + Describe and understand the lab assessments used to determine cardiorespiratory fitness and human performance   + Describe and understand the general physiological responses to exercise   + Communicate effectively with patients and colleagues on appropriate exercise prescription. |

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| 1. **Intended Learning Outcomes of the Course (ILOs)** |
| 1. **Knowledge and Understanding:**   By successful completion of the course the student should be able to:  a 1 – Identify scope and importance of exercise physiology.  a 2- understand acute and chronic effect of exercise on different body systems.  a 3- Identify different energy systems to provide fuel for exercise.  a 4- Understand effect of heat, cold and altitude on exercise performance.  a 5-Uunderstand the physiologic and biochemical mechanisms responsible for fatigue during exercise. |
| 1. **Intellectual Skills:**   By successful completion of the course the student should be able to:  b1- Distinguish activities based on metabolic considerations.  b2- Distinguish which macronutrients contribute to muscle energy production during exercises of different intensities, durations, and modes.  b3- Design effective and safe exercise rehabilitation programs. |
| 1. **Professional and Practical Skills:**   By successful completion of the course the student should be able to:  C 1-Aapplies the knowledge gained from the basic sciences to problems in exercise physiology.  C2-Implement basis for developing the best training practices to enhance performance and health.  C3-Iimplement basis of exercise physiology in prescribing specific exercise program for attending certain goal |
| General and Transferable Skills:  By successful completion of the course the student should be able to:  d1- Interrelate technological advances in exercise physiology.  d2- Communicate effectively with patients and colleagues on appropriate exercise prescription.  d3- Use internet critically as a mean of communication and source of information. |

1. **Contents**

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| **Serial No.** | **Topic** | **No. of hours/Week** | | |
| **Theoretical** | **LAB** | **Total** |
| 1st | Introduction to exercise physiology  Definition- scope and importance | 2 | - | 2 |
| 2nd | Energy for exercise - O2 independent systems | 2 | - | 2 |
| 3rd | Energy for exercise – O2 dependent systems | 2 | - | 2 |
| 4th | Fuel at rest and during different types of exercise intensities | 2 | - | 2 |
| 5th | Effect of exercise on cardiovascular system (CVS) | 2 | - | 2 |
| 6th | Effect of exercise on cardiovascular system (CVS) | 2 | - | 2 |
| 7th | Effect of exercise on respiratory system | 2 | - | 2 |
| 8th | Cardio-respiratory endurance | 2 | - | 2 |
| 9th | Effect of exercise on musculoskeletal system | 2 | - | 2 |
| 10th | Effect of exercise on musculoskeletal system | 2 | - | 2 |
| **11 th** | Effect of exercise on endocrine system | 2 | - | 2 |
| **12 th** | Environmental factors affecting exercise | 2 | - | 2 |
| **13 th** | Completion of unfinished materials and revision | 2 | - | 2 |
| **14 th** | Student presentation | 2 | - | 2 |
| **15 th** | Student presentation | 2 | - | 2 |

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| **5– Teaching and Learning Methods**   * Lecture * Class presentation | |
| **6– Teaching and Learning Methods for limited abilities**   * Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance during the contact hours of the instructor | |
| **7- Student Assessment** | |
| **Assessment methods**   * Periodic quizzes * Assignment and Presentation | |
| **Assessment Schedule** | |
| **Assessment** | **Week** |
| Final written exam | **16th week** |
| Periodic quizzes | **5 th ,** 8 **th,** 10 **th** weeks |
| Student activity | 14-15 **th** weeks |
| **Weighting of Assessments** | |
| **Assessment** | **Weight** |
| Final written exam | **80 %** |
| Periodic exam | **15%** |
| Student activity | **5 %** |
| **Total** | 100**%** |
| **8- List of References** | |
| 1. **Course Notes**    * Introduction to exercise physiology    * Power point notes for each lecture | | |
| 1. **Essential Books (Text Books)**  * Powers, S.K. & Howley E.T., Exercise Physiology: Theory and Application to fitness and Performance. McGraw Hill. | | |
| 1. **Recommended Books**  * Hillegas and Sandowsky. Essentials of cardiopulmonary. Physical Therapy. Saunders | | |
| 1. **Periodicals, Web Sites, … etc**  * **//** <http://advan.physiology.org> * http:// [www.biomed.eg.net](http://www.biomed.eg.net) | | |

**Course Coordinator**

**Dr. Mahmoud Eweda**