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| **Description members of breathing and blood gases** |
| **A- Affiliation** |
| **Relevant program:** |  Genetics and Genetics Engineering Ph.D. Program |
| **Department offering the program:** | Department of Zoology |
| **Department offering the course:** | Department of Zoology |
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| B - Basic information |
| **Title:** Description members of breathing and blood gases | **Code:** 702 Z | **Year/level:** Ph.D. |
| **Teaching Hours:** | **Lectures:** 3 | **Tutorial:** 0 | **Practical:** 0 |
|  | **Total:** 3 h/week |
| C - Professional information |
| **1. Course Learning Objectives:** |
| The objective of this course is to enable the graduates tounderstand**:*** Structure, functions and some diseases of respiratory system.
* Mechanics of pulmonary ventilation**.**
* Blood gases**.**
* Regulation of respiration**.**
* Methods used in measure the functions of respiratory system and blood gases.
* Breathing in newborns.
* Ventilator.
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| **2. Intended Learning Outcomes (ILOS)** |
| **a. Knowledge and understanding:**By the end of course the graduate will be able to : a1. Mention structure and functions of respiratory system. a2. Identify the mechanics of pulmonary ventilation a3. Memorize regulation of respiratory system. a4. Discover methods used in measure the functions of respiratory system and blood gases. 2.3.5. Describe some respiratory system diseases. |
| **b. Intellectual skills:**By the end of course the graduate will be able to : b1. Interpret the mechanics of pulmonary ventilation. b2. Link between respiratory system diseases and blood gases measurement. b3. Conduct dialog and discussion in the field of respiratory system. b4. Analyze respiratory system function and regulation. b5. Develop problem solving skills by detect respiratory dysfunction. |
| **c. Practical and professional skills:**By the end of course the graduate will be able to : c1. Write professional report in respiratory system. |
| c2. Label different methods used in measure the functions of respiratory system and blood gases.**d. General skills:**By the end of course the graduate will be able to : d1. Use different sources of information and knowledge to recognize respiratory system and its functions. d2. Self evaluation and continuous learning. d3. Communicate effectively with teamwork during office works. d4. Teach others and evaluate their performance. d5. Lead scientific meeting and management time. |

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| **3. Contents** |
| **Topic** | **Lecture hours** | **Tutorial hours** | **Practical hours** |
| 1. Pulmonary system structure.
 | 3 | 0 | 0 |
| 1. Mechanics of pulmonary ventilation.
 | 6 | 0 | 0 |
| 1. Blood gases.
 | 3 | 0 | 0 |
| 1. Diffusion of oxygen and carbon dioxide through the respiratory membrane.
 | 3 | 0 | 0 |
| 1. Transport of oxygen from the lungs to the body tissues.
 | 3 | 0 | 0 |
| 1. Regulation of respiration.
 | 3 | 0 | 0 |
| 1. Blood gases measurement methods.
 | 3 | 0 | 0 |
| 1. Measurement methods of respiratory functions.
 | 3 | 0 | 0 |
| 1. Role of respiratory system in blood pH balance.
 | 3 | 0 | 0 |
| 1. Breathing in newborns.
 | 3 | 0 | 0 |
| 1. Ventilator.
 | 3 | 0 | 0 |
| 1. Some respiratory system diseases.
 | 3 | 0 | 0 |
| 1. Seminar + revision
 | 3 | 0 | 0 |
| **Total hours** | **42** | 0 | 0 |

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| **4. Teaching and Learning methods:** |

4.1. Presentations & Movies.

 4.2. Lecture.

 4.3. Problem solving.

 4.4. Internal seminars and discussions.

 4.5. Brain storming.

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| **5- Students’ Assessment Methods and Grading:** |

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| **Method of Assessment** | **Percent**  |
| Semester work & mid Term Exam | 10% |
| Oral Exam | 10% |
| Final Term Examination | 80% |
| **Total** | 100% |

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| **6- List of references:** |
| **6-1 Course notes**Non.**6-2 Required books** - Guyton, A.C. and Hall, J.E. (2006): Textbook of Medical Physiology.11th Ed. Elsevier Inc. Philadelphia. Chapter 37 to 42.- Ganong, W.F. (2010): Review of medical physiology. 23rd Ed. New York: Lange Medical Books / McGraw-Hill. Chapter 35. **6-3 Recommended books**-Tortora, G. and Grabowski, S. (2000): Principles of Anatomy & Physiology. Wiley & Sons. Brisbane, Singapore & Chichester.**6-4 Periodicals, Web sites, etc.**<http://www.leeds.ac.uk/chb/lectures/anatomy7.html><http://en.wikipedia.org/wiki/Respiratory_system><http://www.scienceaid.co.uk/biology/humans/lungs.html><http://meded.ucsd.edu/ifp/jwest/resp_phys/index.html> |

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| **7- Facilities required for teaching and learning:** |
| Class room, overhead projector, Data show and library. |

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| **Course coordinator:** | Prof. Dr. Aziza A.M. El-ShafeyDr. Doaa Sabry Ibrahim |
| **Head of the Department:** | Prof. Dr. Nasr Allah Hassen Abdel Megeed |  |
| **Date:** | 2020/ 2021 |  |