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| **Benha University** **Faculty of Science****جامعة بنهاDepartment of Zoology** |
| **Course Specification****404 Z:Selective topics in zoology** |
| **A- Affiliation** |
| **Relevant program:** | Biotechnology B.Sc. Program |
| **Department offering the program:** | Department of Zoology |
| **Department offering the course:** | Department of Zoology |
| **Academic year/level:**  | Fourth level |
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| B - Basic information |
| **Title:** Selective topics in zoology  | **Code:**404 Z | **Year/level:** Fourth level |
| **Teaching Hours:** | **Lectures:** 2 | **Tutorial:** 0 |
|  | **Practical:**2 | **Total:**3 h/week |
| C - Professional information |
| **1 – Course Learning Objectives:** |
| Allowing the student to gain the necessary knowledge and skills in zoology that selected by the department. |

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| **2 - Intended Learning Outcomes (ILOS)** |
| **a - Knowledge and understanding:**On successful completion of the course, the student should demonstrate knowledge and understanding of:a1- Memorize the excretory system structure, function, regulation and mechanism of action.a2- Identify types of hormones.a3- Recognize the action mechanism of hormones. a4- Describe lymph tissues structure. a5- Recognize the function lymph tissues. a6- Identity diseases related to the lymphatic system.  |
| **b - Intellectual skills:**On successful completion of the course, the student should be able to.b1- Compare between hormone types and their action mechanisms.  b2- Link between the urine formation process and regulation of urine. b3- Interpret of diseases related to the lymphatic system.  b4- Combine the structure and function of lymphoid tissues. |
| **c - Practical and professional skills:**On successful completion of the course, the student should be able to:c1- Identity types of salts found in urine slide.c2- Draw lymphoid tissues.c3- Describe some diseases related to the lymphatic system |
| d - General and transferable skills:On successful completion of the course, the student should be able to:d1- Collaborate effectively with teamwork members.d2- Effectively manages tasks, time, and resources. d3- Search for information and engage in life-long self learning discipline.  |

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| **3 - Contents** |
| **Topic** | **Lecture hours** | **Tutorial hours** | **Practical hours** |
| Introduction to excretion | 2 | 0 | 2 |
|  The urinary system | 2 | 0 | 2 |
| Physiological functions of kidneys | 2 | 0 | 2 |
| Urine formation and regulation of urine concentration | 2 | 0 | 2 |
| Types of hormones | 2 | 0 | 2 |
| The action mechanism of hormones | 2 | 0 | 2 |
| Pineal gland | 2 | 0 | 2 |
| Thymus gland | 2 | 0 | 4 |
| Introduction to lymphatic system | 2 | 0 | 2 |
| Lymph tissues (lymph nodes and spleen) | 2 | 0 | 2 |
| Lymph tissues(tonsils and thymus) | 2 | 0 | 2 |
| Lymph tissues(peyer's patches and gut associated lymphoid tissue) | 2 | 0 | 2 |
| Functions of lymphatic system | 2 | 0 | 2 |
| Names of diseases related to the Lymphac system,( symptoms anddiagnosis ) .Names of diseases related to the Lymphac system,( symptoms anddiagnosis ) .Names of diseases related to the Lymphac system,( symptoms anddiagnosis ) .Diseases related to the lymphatic system | 2 | 0 | 2 |
| **Total hours** | **28** | 0 | **28** |

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

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| **Intended Learning Outcomes** | **Lecture** | **Presentations & Movies** | **Discussions & Seminars** | **Practical** | **Problem solving** | **Brain storming** |
| **Knowledge & Understanding** | a1 | Memorize the excretory system structure, function, regulation and mechanism of action. | x | x | x | x | x | x |
| a2 |  Identify types of hormones. | x | x | x | 0 | x | x |
| a3 | Recognize the action mechanism of hormones. | x | x | x | 0 | x | x |
| a4 | Describe lymph tissues structure. | x | 0 | x | x | 0 | x |
| a5 | Recognize the function lymph tissues. | x | 0 | x | 0 | 0 | x |
| a6 | Identity diseases related to the lymphatic system. | x | 0 | x | x | 0 | x |
| **Intellectual Skills** | b1 | Compare between hormone types and their action mechanisms.   | x | **x** | **x** | 0 | **x** | **x** |
| b2 | Link between the urine formation process and regulation of urine. | x | **x** | **x** | 0 | **x** | **x** |
| b3 |  Interpret of diseases related to the lymphatic system.  | x | **x** | **x** | **x** | **x** | **x** |
| b4 | Combine the structure and function of lymphoid tissues. | x | 0 | x | x | 0 | x |
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| **Practical and professional skills** | c1 | Identity types of salts found in urine slide. | 0 | 0 | 0 | x | x | 0 |
| c2 | Draw lymphoid tissues. | 0 | 0 | 0 | x | 0 | 0 |
| c3 | Describe some diseases related to the lymphatic system. | x | 0 | 0 | x | 0 | 0 |
| **General Skills** | d1 | Collaborate effectively with teamwork members. | 0 | 0 | x | x | x | x |
| d2 | Effectively manages tasks, time, and resources. | 0 | 0 | 0 | x | x | 0 |
| d3 | Search for information and engage in life-long self learning discipline. | x | 0 | 0 | x | x | x |
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| **5- Students’ Assessment Methods and Grading:** |

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| **Tools** | **To Measure** | **Time schedule** | **Grading** |
|  Mid-Term Exam + Semester Work  | a1 to a3, b1 to b2 and d1 to d3 | sixth week | 12 |
| Oral exam | a1 to a6 and b1to b4 | Bi-weekly | 16 |
| Practical exams | c1 to c3 | Fourteenth week | 24 |
| Written exam | a1 to a6 and b1to b4 | Sixteenth week | 48 |
| Total | 100 % |

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| **6- List of references:** |
|  **6-1 Course notes:** Non

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| **6-2 Required books** - Guyton, A.C. and Hall, J.E. (2006): Textbook of Medical Physiology.11th Ed. Elsevier Inc. Philadelphia.-Harvey, R.A. and Ferrier, D.R. (2011): Lippincotts Illustrated Reviews: Biochemistry, North American Edition. 5th Ed, JB Lippincott, Philadelphia.**6-3 Recommended books**- Campbell, N. A.; Reece, J. B.; *et al.* (2002): Biology. 6thEd. Benjamin/Cummings.**6-4 Periodicals, Web sites, etc.**www.bu.edu.eg/staff/doaamohamed7/14789www.rinconmedico.org |

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| **7- Facilities required for teaching and learning:** |
| * Zoology Lab.
* Class room, overhead projector, Data show and library.
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| **Course coordinator:** |  |  |
| **Head of the Department:** | Prof. Dr. Moshira M.E. Seliem |  |
| **Date:** | 2018 / 2019 |  |