

Course Specification

University: Menoufiya

Faculty: Science

Course Specifications:

Programme (s) on which the Course is given: Zoology, Vertebrates,
Comparative Anatomy & Embryology.

Major or Minor Element of Programmes: Major

Department offering the Program: Zoology

Department offering the Course: Zoology

Qualifying course for M.SC. Students

Date of Specification Approval: 2013

A- Basic Information

Title: Comparative Anatomy

Code: Z643

Credit Hours: 3

Lecture: 2

Tutorial: 0

Practical: 2

Total: 3

B- Professional Information

1- Overall Aims of the Course: At the end of this course, the student should be able to:

- * Compare certain systems within vertebrate animals.
- * Compare certain organs in different vertebrate classes.
- * Trace the differences within the homologous structures in the vertebrate body.

2- Intended Learning Outcomes of Course (ILOs):

Knowledge and Understanding:

Student should acquire knowledge and understanding of:

a1- The different nature of vertebrate structural organization versus other creatures.

a2- The developmental progress of the program-related knowledge.

a3- The fact of separate lines of creation.

a4- The related terminology, nomenclature and classification systems.

a5- The absence of the so-called ontogenetic links within vertebrates.

a6- The related basic scientific facts, concepts, principles and techniques.

a7- The processes and mechanisms supporting the structure and function of the specific topics.

a8- The theories and methods applied for interpreting and analyzing data related to discipline.

a9- The relation between the studied topics and environment.

b- Intellectual Skills:

Student should be able to:

b1- Deduce the superiority of the holy creator.

b2- Demonstrate the fact of creation using the comparative structural approaches.

- b3- Postulate and deduce mechanisms and procedures to handle scientific problems.
- b4- Differentiate between subject-related theories and assess their concepts and principles.
- b5- Analyze and interpret qualitatively and quantitatively science relevant data.
- b6- Develop lines of argument and appropriate judgments in accordance with scientific theories and concepts.
- b7- Construct several related integrated information to confirm, make evidence and test hypotheses.

c- Professional and Practical Skills:

Student should be able to:

- c1- Write notes on differences based on the comparative anatomical approach..
- c2- Make clear, labeled drawings for available specimens and slides.
- c3- Apply techniques and tools considering scientific ethics.
- c4- Trace different organ systems within vertebrates using comparative manner.
- c5- Solve problems using a range of formats and approaches.
- c6- Identify and criticize the different methods used in addressing subject related issues.

d- General and transferable Skills:

Student should be able to:

- d1- Increase the ability to provide oral communication.
- d2- Use effectively information and communication technology.
- d3- Present views in a logic way.
- d4- Apply effectively scientific models, systems, and tools.
- d5- Acquire self- and long life–learning.
- d6- Development of scientific writing skills.
- d7- Identify roles and responsibilities, and their performing manner.

3- Contents

Topic	No. of Hours	Lecture	Tutorial / Practical
Survey for Comparative study of certain organ system in different vertebrate groups.	3	1	-
Urinogenital system (development of nephrons and their organization into different kidney).	6	2	2
Nervous system (its differentiation	9	3	3

and growth; brain and its parts; cranial nerves; spinal nerves; autonomic nerves and sense organs.			
Muscular system (embryonic development of muscles; different kinds of muscles and appendicular muscles)	9	3	3
Circulatory system (Blood vascular system; structure and modification of hearts; aortic arches and their modification; other arteries; major veins and their modifications)	3	1	1
Lymphatic system	6	2	2

(Lymphatic vessel; lymphatic capillaries, lymphatic nodes; Amphibian lymphatic hearts and lymphatic organs)			
Respiratory system (gills; lungs; swim bladder; its origin and function and accessory respiratory organs)	6	2	2

4- Teaching and Learning methods

- 4.1- Lectures
- 4.2- Practical Sessions.
- 4.3- Writing essays.
- 4.4- Oral presentation.
- 4.5- Research assignment.

5- Student assessment methods

- 1- Essays to assess ability of writing
- 2- Oral exam to assess the degree of understanding
- 3- Mid-term to assess the degree of follow up.
- 4- Final exam to assess the whole performance.

5- Reports to assess collection of course material

6- Assessment schedule

Assessment 1 Essay	Week 1 essay/term
Assessment 2 Oral exam	Week Twice/ term
Assessment 3 midterm	Week Midterm
Assessment 4 final exam	Week final exam

Weighting of assessments

Mid-term examination	20%
Final-term examination	40%
Oral examination	10%
Practical examination	20%
Semester work	10%
Other type of assessment	00%
Total	100%

6- List of references

6.1- Course notes

**Internet and library material.

* Number of handouts to be given separately during the course span.

6.2- Essential books (text books)

* Recent books in Comparative Anatomy.

7- Facilities required for teaching and learning

* Dark room equipped with overhead and LCD projector.

* Laboratory slides and specimens.

Course coordinator: Dr. Gamal M Badawy

Head of Department: Prof. Dr. Saber Sakr

Date: 2013