A- Basic Information

Programme(s) on which the course is given:	MSc of Fish Biology and Aquatic Ecology
Depaetment responsible for offering the course:	Zoology
Depaetment responsible for teaching the course:	Zoology
Academic year:	2012-2013
Course title and code:	**Comparative Anatomy Z642**
Contact hours (credit hours):	Lecture: 2 hrs Practical: 2hrs Total: 3 hrs
Course coordinator:	Dr. Gamal Badawy

B- Professional Information

The course aim and intended learning outcomes are based on that mentioned in the programme specifications, with more course-related specific details.

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

* Compare certain systems within vertebrate animals.
* Differentiate between certain organs in different vertebrate classes.
* Demonstrate the differences within the homologous structures in the vertebrate body.

2- Intended Learning Outcomes of Course (ILOs):

a- Knowledge and Understanding:

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

a2- Describe structure of organ systems of vertebrates

a3- Identify the structural functional adaptation of species.

a4- Recognize the absence of the so-called ontogenetic links within vertebrates.

b- Intellectual Skills:

b1- Deduce the superiority of the holy creator.

b2- Relate the morphological adaptation to function.

b3- Analyse the fact of creation using the comparative structural approaches.
b4- Compare between the anatomical structures of studied vertebrates

c- Professional and Practical Skills:
c1- Differentiate between different morphological structures within vertebrate classes.
c2- Interpret the functions of these differences.
c3- Sketch diagrams to identify anatomical features in an actual organism
c4- Practice dissection techniques.

d- General and Transferable Skills:
d1- Integrate and evaluate information from a variety of sources.
d2- Develop independent learning with open-minded and critical enquiry.

d3- Exchange ideas, principles, and theories.
d4- Present views in a logic way.
d5- Develop oral presentation skills.
d6- Improve scientific writing skills.

3- Course Contents

Topic	No. of hours	Tutorial/ Practical	Lecture
Survey for comparative study of certain organ systems in different vertebrate groups.	**3**	**-**	**1**
Urinogenital system:development of nephrons and their organization into different kidney.	**6**	**2**	**2**
Nervous system: its differentiation and growth; brain and its parts; cranial nerves; spinal nerves; autonomic nerves and sense organs.	**9**	**3**	**3**
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: lymphatic vessel; lymphatic capillaries; lymphatic nodes; amphibian lymphatic hearts and lymphatic organs.	**6**	**2**	**2**
Respiratory system: gills; lungs; swim bladder; its origin and function and accessory respiratory organs.	**6**	**2**	**2**

4- Teaching and Learning Methods

- Lectures.
- Practical sessions.
- Writing essays.
- Research assignment**.**
- Oral presentation.
- Discussion.

5- Student Assessment Methods

- Essays
- Oral exms
- Written exams.
- Practical exams.

- Quizzes.

Assessment schedule

Assessment 1	Essay	Week 1 essay/term
Assessment 2	Oral exam	Twice/term
Assessment 3	Mid-term exams	Week 7
Assessment 4	Semester Work Exam	Week 10
Assessment 5	Final term exam	Week 14

Weighting of assessments

Mid-term examination	20%
Final-term examination	40%
Oral examination	10%
Practical examination	20%
Semester work	10%
Total	100%

6- List of references

1. **Course Notes**
   1- Internet and library material.
   2- Handouts given separately during the course span.
2. **Essential Books (Text books):**
   1- Hildebrand, M. (1988): Analysis of Vertebrate Structure. 3rd ed. John Wiley & Sons, Inc. New York.
   2- Kluge, A.G. (1977): Chordate structure and Function. 2nd ed. Macm.Publ.Co.,Inc. New York.
   3- Young, J.Z. (1985): The Life of Vertebrates. 3rd ed. Oxford Univ.Press. New York.
3. **Recommended Books**
   1- Hopper, A. (1985): Foundation of animal development. 2nd Edition. Oxford Univ.Press. New York.
   2- Hole, J. (1986): Essentials of human Anatomy and Physiology. 2nd Edition Brown Publishers. USA.
4. **Periodicals, web sites,…,etc**
   1- Journal of Experimental Zoology.
   2- Journal of Development.

3- Differentiation.
4- Arch. Anat. Microsc. Morphol. Exp.

7- Facilities required for teaching and learning

* Dark room equipped with overhead and LCD projector.
* Laboratory slides and specimens.
* Librarian facilities.
* Computers with internet Access**.**

Course coordinator: Dr. Gamal Badawy
Head of Department: Prof. Saber Sakr
Date: January / 2013