OFFICIAL UNDERGRADUATE COURSE OUTLINE (page 1)

COURSE IMPLEMENTATION DATE:	September 1994
COURSE REVISED IMPLEMENTATION DATE:	September 2014
COURSE TO BE REVIEWED:	March 2019
(six years after UEC approval)	*(month, year)*

OFFICIAL UNDERGRADUATE COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department – see course syllabus available from instructor

BIO 305	Biology	4
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UFV CREDITS

Anatomy and Physiology of Vertebrates I
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This course deals with physiological and anatomical adaptations of select vertebrate animals with an emphasis on basic physiological concepts and structure/function relationships within the vertebrate body plan.

PREREQUISITES: Any three 200-level biology courses.
COREQUISITES: None
PRE or COREQUISITES:

SYNONYMOUS COURSE(S):
(a) Replaces: **N/A**
(b) Cross-listed with:
(c) Cannot take: **N/A** for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: **90**

STRUCTURE OF HOURS:

Lectures:	**45**	Hrs
Seminar:		Hrs
Laboratory:	**45**	Hrs
Field experience:		Hrs
Student directed learning:		Hrs
Other (specify):		Hrs

TRAINING DAY-BASED INSTRUCTION:
Length of course:
Hours per day:

OTHER:
Maximum enrolment: **36**
Expected frequency of course offerings: Every second year
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	☐ Yes	☒ No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	☐ Yes	☒ No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	☐ Yes	☒ No

Course designer(s): **Anthony Stea**

Department Head:	**Allan Arndt**	Date approved:	**October 30, 2012**
Supporting area consultation (CWC)		Date of meeting:	**January 11, 2013**
Curriculum Committee chair:	**David Fenske**	Date approved:	**January 25, 2013**
Dean/Associate VP:	**Lucy Lee**	Date approved:	**January 25, 2013**
Undergraduate Education Committee (UEC) approval		Date of meeting:	**March 1, 2013**

LEARNING OUTCOMES:

Upon successful completion of this course, students will be able to:

- compare the physical characteristics of the major groups of vertebrates
- explain the physiological transport of important molecules across cell membranes
- Interpret the reasons for the differences in the integumentary system in vertebrates
- evaluate the physiology of muscles and contrast the musculoskeletal system of vertebrates
- examine the physiology of the nervous and sensory systems in different vertebrates
- compare the role of the endocrine system in different vertebrates
- recognize and interpret the evolutionary trends in vertebrate anatomy

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Lectures, laboratories, small group discussions, audio-visual presentations.

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

☒ Examination(s) ☐ Portfolio assessment ☐ Interview(s) ☐ Other (specify):

☐ PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example for this course might be:]

Functional Anatomy of the Vertebrates, 3rd Ed.
Karel F. Liem, William E. Bemis, Warren F. Walker Jr., Lance Grande

In-house Lab Manual

LIBRARY RESOURCES:

Books:
The Life of Vertebrates, Young
An Atlas of Histology, Freeman & Bracegirdle
Animal Physiology, Ekert & Randall
The Vertebrate Body, Romer & Parsons
Human Physiology, Guyton
Human Physiology, Vander, Sherman & Luciano
Journals:
Journal of Experimental Biology
Journal of comparative Physiology
Annual Review of Physiology
Physiological Zoology
Environmental Physiology
Canadian Journal of Zoology
Nature
Science

SUPPLIES / MATERIALS:

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Lecture midterm	25%
Lecture final	35%
Laboratory	30%
Assignments and quizzes	10%

COURSE CONTENT:

[Course content varies by instructor. An example of course content might be:]

TOPICS WILL INCLUDE:

Introduction
- history of anatomy physiology
- overview of experimental methods used
- membrane physiology and cellular transport

Integumentary System of Vertebrates

Musculoskeletal System of Vertebrates
- skeletal anatomy of vertebrates
- physiology of skeletal muscle
- major muscle groups in vertebrates

Nervous Systems
- physiology of neural function
- differences in vertebrate brains, intelligence

Sensory Systems
- unique adaptations of vertebrate sensory structures

Endocrine Systems:
- vertebrate hormones

Laboratory Experiments:
- Field trip
- Histology Lab
- Skeletal system comparison Labs
- External Anatomy
- Comparative muscle anatomy
- EMG Muscle physiology
- Nervous System physiology simulation
- Comparative Brain Anatomy Lab

Supporting Laboratory Equipment:
Basic: Microscopes, slide collection, preserved specimens, dissecting equipment, models, collection of skeletons.
Special: EMG apparatus, computers.