

FLORIDA ATLANTIC UNIVERSITY™

Undergraduate Programs—COURSE CHANGE REQUEST¹

UUPC APPROVAL _____
 UFS APPROVAL _____
 SCNS SUBMITTAL _____
 CONFIRMED _____
 BANNER POSTED _____
 CATALOG _____

DEPARTMENT: BIOLOGICAL SCIENCE COLLEGE: COLLEGE OF SCIENCE

COURSE PREFIX AND NUMBER: ZOO 4690 CURRENT COURSE TITLE: COMPARATIVE VERTEBRATE MORPHOGENESIS

CHANGE(S) ARE TO BE EFFECTIVE (LIST TERM): FALL 2013 _____ TERMINATE COURSE (LIST FINAL ACTIVE TERM):

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| <p>CHANGE TITLE TO:</p> <p>CHANGE PREFIX FROM: _____ TO: _____</p> <p>CHANGE COURSE NO. FROM: _____ TO: _____</p> <p>CHANGE CREDITS² FROM: _____ TO: _____</p> <p>CHANGE GRADING FROM: _____ TO: _____</p> <p>CHANGE WAC/GORDON RULE STATUS³ ADD* _____ REMOVE _____</p> <p>CHANGE GENERAL EDUCATION REQUIREMENTS⁴ ADD* _____ REMOVE _____</p> <p><small>*WAC and General Education criteria must be clearly indicated in attached syllabus. For WAC Guidelines: www.fau.edu/WAC. Please attach General Education Course Approval Request: www.fau.edu/deanugstudies/GeneralEdCourseApprovalRequests.php</small></p> | <p>CHANGE DESCRIPTION TO:</p> <p>CHANGE PREREQUISITES/MINIMUM GRADES TO*:</p> <p><u>EXISTING</u> BSC 1010, BSC 1010L, BSC 1011, BSC 1011L, PHYSICS RECOMMENDED</p> <p><u>NEW PRE/REQ.</u> BSC 1010, BSC 1010L, BSC 1011, BSC 1011L, CHM 2045, CHM 2045L, CHM 2046, CHM 2046L</p> <p><u>MINIMUM PASSING GRADE C-</u></p> <p>EXISTING COREQUISITES:</p> <p>CHANGE COREQUISITES TO*:</p> <p>CHANGE REGISTRATION CONTROLS TO:</p> |
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Attach syllabus for ANY changes to current course information.

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| <p>Should the requested change(s) cause this course to overlap any other FAU courses, please list them here.</p> | <p>Please consult and list departments that might be affected by the change(s) and attach comments.⁵</p> |
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Faculty contact, email and complete phone number:
 David Binninger; binninge@fau.edu; 561.297-3323

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| <p>Approved by:</p> <p>Department Chair: <u>David Binninger</u></p> <p>College Curriculum Chair: <u>J. E. My</u></p> <p>College Dean: <u>Dr. Johnson</u></p> <p>UUPC Chair: <u>J. E. My</u></p> <p>Undergraduate Studies Dean: <u>Edith...</u></p> <p>UFS President: _____</p> <p>Provost: _____</p> | <p>Date:</p> <p>Feb. 27, 2013</p> <p><u>3/21/13</u></p> <p><u>3/20/13</u></p> <p><u>3/22/13</u></p> <p><u>3/27/13</u></p> | <p>1. Syllabus must be attached; syllabus checklist recommended; see guidelines and checklist: www.fau.edu/academic/registrar/UUPCinfo</p> <p>2. Review Provost Memorandum: Definition of a Credit Hour www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf</p> <p>3. WAC approval (attach if necessary)</p> <p>4. Gen. Ed. approval (attach if necessary)</p> <p>5. Consent from affected departments (attach if necessary)</p> |
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COMPARATIVE VERTEBRATE MORPHOGENESIS - ZOO 4690 – 001-CRN 13500
FLORIDA ATLANTIC UNIVERSITY @ DAVIE - BROWARD CAMPUS Fall 2013

Professor/Instructor: *James Kumi-Diaka (BSc, DVM, MSc, PhD, Vee-dip)*
Office: Davie West Bldg DW 441
Phone: (954) 236-1135:
email: jdiaka@fau.edu

Period/Semester: January 7, 2013 - May 1, 2013
COURSE CREDITS: 3
ROOM: ES 104
CLASS HOURS: MW, 9 am - 10:20 noon
OFFICE HOURS: 11 am - 1 pm Fridays; // Room - DW441 and DW442

COURSE PREREQUISITS:

BSC 1010, BSC1010L, BSC 1011, BSC 1011L, CHM 2045, CHM 2045L,
CHM 2046, CHM 2046L, with a minimum of a C-

COURSE COREQUISITS: ZOO 4690L

COURSE DESCRIPTION:

Major topics considered in this course include: concept and principles of cancer as a disease entity; stages of cancer -initiation, promotion and progression; etiology of cancer - genetic and epigenetic components; pathogenesis-genetic basis; risk factors -multi-factorial; diagnostic approach - current and future; therapeutic/preventive regimens; patient care; future perspectives in oncology

COURSE OBJECTIVES:

To expose students to the concept and principles of developmental biology with regard to structural and functional-physiological development (embryology-anatomy) in vertebrates

At the completion of the course, the student will be able to:

- [1] Identify the components and general concepts of developmental anatomy of the vertebrate
- [2] Understand perceive the characteristics of cells with respect to their growth characteristics and interactions
- [3] Discuss the processes involved in gametogenesis, fertilization, cleavage, gastrulation through organogenesis and formation of the live organism

- [4] Relate the basis for classification the vertebrate into the various classes and the interclass differences

ICULATION TO UNIVERSITY MISSION: This course addresses both the university mission statement as well as the strategic plan. This is accomplished by offering a high quality academic curriculum in a caring environment, stimulating creative initiative, utilizing some problem based learning, research reviews, critical thinking and the development of both written and oral competencies. With the knowledge that the world and human needs are constantly changing, this course fosters motivated, self-directed analytical thinking, discusses current research in the field and stresses a sense of ethical and social responsibility. Students in this course will develop an awareness of the contributions of scientists and practitioners from diverse domestic and international backgrounds as well as biomedical and health issues that impact those

living within and outside of our community. These goals are attained by providing quality instruction, class discussions or debates, discussions on various research topics, exams and written reports when applicable, to help students attain their goals.

TEXT BOOK(S):

- i) Patten's Foundations of Embryology 6th Edit, Bruce M Carlson
- ii) Principles of Development 2nd Edit, Lewis Wolpert

EXAMINATIONS: dates and scores:

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| Exam I | February 11, 2013: | 100% |
| Exam II | March 25, 2013: | 100% |
| Exam III | April 24, 2013: | 100% |
| Exam IV* | May, 1, 2013: | 100% [Cumulative; Optional] |
| Quizzes (periodic & un-announced; optional; extra credit; NO MAKE-UPS ALLOWED) | | |

GRADING: A= \geq 90%; B = 80-88; B+ = 89%; C= 70-78; C+ = 79%; D= 60-68; D+ = 69; F=<60%.

Examination Policy:

- 1. 10% penalty for all make-ups (exemption only on presentation of a **verifiable** note from a Physician - *address and phone*; or the Police - location and time)
- 2. The use of phones or any other electronic gadgets is not allowed during examinations. There will 10% penalty for violation of this rule
- 3. There will be no "curves" in any exams; in lieu of this, there will be periodic unannounced quizzes

METHODS OF TEACHING:

- 1. Lectures, open discussions, and assigned readings in text book/s.
- 2. Reading assignments will be given periodically in class as the occasion arises
- 3. Audio-visuals: power points and overhead transparencies, where necessary
- 4. Interactive discussions of cases and/or current issues

LECTURE ETIQUETTE:

Every effort will be made by the professor to begin lectures promptly. Students wishing to exit while the lecture is in progress are expected to leave discreetly. The instructor and students will conduct themselves in a professional manner during the course of the lecture. Questions from students will be recognized at the discretion of the lecturer in a manner that is minimally disruptive to the lecture. **Cell phones and pagers should be shut off during lectures.**

EXAMINATION ETIQUETTE:

Examinations will begin promptly at the scheduled time. Students may be penalized for tardiness. **Cell phones must be shut off during examinations and quizzes.** Students must surrender their question packets and answer forms promptly at the conclusion of the examination and upon demand of/by the instructor/proctor. Students should then pick up personal belongings and leave directly and discreetly. Once one student has completed the examination and turned it in, no examinations will be given to latecomers. Written challenges of exam questions must be presented within one week of posting of the grades.

Policy on makeup tests, late work, and incompletes

If a student cannot attend an exam or hand in a homework project on time due to circumstances beyond their control then the instructor may assign appropriate make-up work. Students will not be penalized for absences due to participation in University-approved activities, including athletic or scholastics teams, musical and theatrical performances, and debate activities. These students will be allowed to make up missed work without any reduction in the student's final course grade. Reasonable accommodation will also be made for students participating in a religious observance. Also, note that grades of Incomplete ("I") are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances. A grade of "I" will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's University Catalog. The student must show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

ACADEMIC DISHONESTY POLICY:

All students are bound by the Academic Dishonesty Policy. Any student(s) caught either cheating and/or giving or receiving assistance during a testing session will automatically receive an F grade (0%) on that test or examination. Furthermore, the individual(s) may be referred to the Academic Dishonesty Committee of the University and to the Chair of the Department of Biological Sciences for additional disciplinary action.

STUDENT BEHAVIOR POLICY:

All FAU students are expected to behave according to accepted norms that ensure a climate wherein all can exercise their right to learn. Disruptive behavior is not acceptable in the classroom. Students engaging in such behavior may be asked to leave or may be moved from the class by security personnel. Actions such as violence, shouting, use of cell phones and/or beepers, using profanity, interrupting classes, and any other behavior that the instructor believes creates an unpleasant environment in the classroom will be grounds for withdrawal from the course, disciplinary/judicial proceedings, or failure of the course.

Below is the link for the Academic Integrity Statement - FAU:

http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

DISABILITY STATEMENT:

Students with documented special learning needs may want to inform the instructor so that accommodations may be made, or contact the FAU Office of Services for Students with Disabilities:

- in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

COURSE OUTLINE

Note: HW (homework): For all assigned readings, any of the text books may be used. Make use of the index for reference of the needed subject matter

WEEK-1 Homework (HW) – Read Chp1-Basic concept

- 1 Introduction: historical perspective; phylum chordata -characteristic features; concepts of homology
- 2 Vertebrate phylogeny: classification

WEEK-2 HW – Read pages 77-80, 390-392;

- 3 Gametogenesis: - definitions; concept of; nuclear and cytoplasmic factors/pathways;
- 4 Fertilization:- definition; concept of; the process/steps; influencing factors; end-product;
Parthenogenesis concept of and factors;

WEEK-3 HW – Read pages 235-245; 303

- 5 Post-fertilization developments; (a) cleavage- definition and classification
(b) Gastrulation: -definition; classification & formation; the primary germ layers (PGL) and their role;
(c) Organogenesis – definition; derivatives of the PGL
- 6 Induction: - principle of; physiological significance; classification;

WEEK-4 HW – Read on Significance of placenta in amniotes

- 7 Placentation: -definition of; steps in formation; in amniotes and anamniotes;
Classification of; and functions;
- 8 The reproductive cycle: definition; estrus; menstrual cycle; controlling factors

WEEK-5 HW – Read on organogenesis (origin of the musculoskeletal system)

- 9 The integument; - components; structure and derivatives.
- 10 Skeletal system I; - components; skull development; morphology

WEEK-6 HW – Read on organogenesis (origin of the musculoskeletal system)

- 11 Skeletal system II; - origin and developmental anatomy of vertebrae
- 12 Skeletal system II; - appendicular skeleton/ origin; development and morphology

WEEK-7 HW-Read on innervation of the muscular system

- 13 Musculature I; - muscle origin; fate of myotomes; classification; histoanatomy and topography
- 14 Muscular system II; - development of brachiomeric & appendicular muscles

WEEK-8 HW – Prepare and submit two questions on muscular system for class discussions

- 15 Development of coelomic cavities, and mesenteries
- 16 Digestive system: - classifications, evolution & morphogenesis; derivatives

WEEK-9 HW- Read on the respiratory system in the mammals

- 17 Respiratory system; - classification, evolution, morphogenesis, and derivatives;
- 18 Urogenital system I; -- kidney structure, morphogenesis, classification; primordial gonads

WEEK-10 HW – Prepare and submit two questions on urogenital system for class discussions

- 19 Urogenital system II; - reproductive system; embryogenesis and morpho-anatomy
- 20 Cardiovascular system I; --morphogenesis; extraembryonic circulation

WEEK-11 HW – Read on the cardiovascular system

- 21 Cardiovascular system II; - aortic arches and their derivatives
- 22 Cardiovascular system III; - the heart - its embryonic origin and development

WEEK12 HW – Read and prepare two question on the vascular system for class discussions

23 Cardiovascular system IV; - arterial and venous circulation; evolution

24 Nervous system I; - morphogenesis & histo-anatomy of neural tube (brain & spinal cord)

WEEK-13 HW – Read on the embryologic origin of the nervous system

25 Nervous system II; - development of autonomic nervous system, spinal nerves, spinal cord

26 Nervous system II; - cranial nerves; special senses - olfactory, optic, otic, etc

WEEK-14 HW- Search the internet for developmental anomalies in humans – Submit a list of four of them

27 Developmental anomalies

WEEK-15 HW – Submit a one page paper on hormonal control of phenotypic sex in mammals

28 Selected topics – hormonal control of development; senescence

Note:

1. The schedule of topics to be discussed each week is subject to change during the semester, depending on the needs of the class.
2. Students are expected to read the notes and the appropriate chapters (on topics listed above) in the text books in preparation for lectures and/or examinations.

No cell phones allowed during classes and examination periods