INDIAN RIVER STATE COLLEGE

COURSE SYLLABUS

Spring 2014

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| **COURSE TITLE:** | **COURSE NUMBER:** |
| ***Evolutionary Biology*** | PCB 3674 |

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| **COURSE DESCRIPTION:** |
| This course is an introduction to modern evolutionary theory. Population genetics, adaptation, speciation theory, phylogeny, human evolution and other related topics are discussed. |

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| **PREREQUISITE:** |  |
| BSC 2010/BSC 2010L, BSC 2011/BSC 2011/L with a grade of C or better. |  |
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| **COREQUISITE:** |  |

none

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| **INSTRUCTOR**  **INFORMATION:** | Sherry Bowen  Office:  N217  Phone:  772-462-7502  Email: [sbowen@irsc.edu](mailto:sbowen@irsc.edu)  Office hours posted on instructor’s website |
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| **REQUIRED TEXTBOOK:** | | |
| Evolution: Making Sense of Life, 2nd Edition, Zimmer & Emlen, Ben Roberts Publishers       |  | | --- | | **\*TENTATIVE ASSIGNMENT SCHEDULE:** | | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Week of       LECTURE TOPIC                                      CHAPTER**  **READINGS**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­\_   |  |  |  | | --- | --- | --- | | Jan 8 | Introduction, How Scientists Study Evolution | 1 | | Jan 13 | How Scientists Study Evolution | 1 | | Jan 20 | **Holiday**, Evolution Before Darwin | 2 | | Jan 27 | What the Rocks Say | 3 | | Feb 3 | **EXAM I (Ch 1-3)** Natural Selection | 6 | | Feb 10 | Natural Selection | 7, 8 | | Feb 17 | Sexual Selection | 11 | | Feb 24 | **EXAM II (Ch 6-8, 11)**, The Origin of Species | 13 | | Mar 3 | Speciation | 13 | | Mar 10 | Macroevolution | 14 | | Mar 17 | Coevolution | 15 | | Mar 24 | **Spring Break** |  | | Mar 31 | Coevolution, **EXAM III (Ch 13-15)** | 15 | | Apr 7 | Human Evolution | 17 | | Apr 14 | Human Evolution | 17 | | Apr 21  Apr 28 | Evolutionary Medicine, **EXAM IV** **(Ch 15, 17-18)**  **COMPREHENSIVE FINAL** | 18 | | |  | | | |
| **GRADING POLICIES:** |  | |
| The final course grade is derived from four exams and final (50%), a research paper (20%) and four on-line discussion questions (30%).    The semester average is based on the percentage of total percentage points:  90 -100  = A  80 -  89  = B  70 -  79  = C  60 -  69  = D  below 60 = F  **W**--deadline is Wednesday, Mar 19      **I –** if passing but emergency prevents taking final      **Exams:**  **Four Unit Exams** will be given during the semester. The lowest grade out of these unit exam grades will be dropped. The grade for the **Comprehensive Final Exam** will count double of a unit exam, and will not be dropped.    Exact dates of exams will be announced in lecture. **NO** makeup exams or assignments will be given.  If a student misses an exam for any reason, that exam will be dropped.    **Research Paper:**  The research paper is required and will have several deadlines to help maintain progress on the paper, as follows:   |  |  | | --- | --- | | **Topic** – Jan 27  **First draft** (proper CSE style and grammar, 5% of final grade)– Mar 19  **Final submission** (revisions, 15% of final grade) – Apr 14  A separate handout will cover details of the paper format and grading rubric. Any missed deadlines will result in a five point deduction **per day.**    **On-line Discussion Questions:**  A topical discussion question will be posted at the beginning of each module.  Students will be divided into groups and the composition of the groups will be different for each question.  This is a discussion, so simple one time contributions will not receive full credit.  Each student will be expected to post their response.  Each group will then post their group’s response.    A separate handout will cover details of the grading rubric for the discussions. The discussion responses will be due the Friday before the unit exam.  Any missed deadlines will result in a five point deduction per day.   |  | | --- | |  | | |  | |
| **COURSE OBJECTIVES:** | |
| The goal of this course is to provide a basic understanding of the concepts and effects of evolution, the unifying theme of biology.  Following completion of this course you should be able to effectively discuss the scientific foundations of evolution.  Basic ideas to be addressed include understanding what a scientific theory is, and how this applies to evolution, genetics, and mutations.  Mechanisms of evolution that will be discussed include natural selection, individual and group selection, sexual selection, the role of non-genomic influences in gene expression, and speciation.   |  | | --- | |  | | |
| **STUDENT LEARNING OUTCOMES:** | |
| |  | | --- | | **Upon completion of PCB 3674, Evolutionary Biology, students will have the ability to:**   * Discuss the scientific foundations of evolution. * Analyze scientific research papers for the application of the scientific theory. * Discuss mechanisms of evolution, to include natural selection, individual and group selection, sexual selection * Communicate major evolutionary concepts and relate how these are connected within various areas of the biological and physical sciences. | | |
| **PROGRAM LEARNING OUTCOME:** | |
| |  | | --- | | **Upon completion of PCB 3674, Evolutionary Biology, students will have:**   * Developed the knowledge, skills, attitudes and values necessary for positions of responsibility in a variety of Life Science industries | | |

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| **ACTIVITIES AND REQUIREMENTS:** |
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| **CHEATING:** Cheating, including plagiarism, of ANY kind will not be tolerated by this department.  Any student caught cheating will receive an immediate F in the assignment. |
| **MEANS OF ACCOMPLISHING OUTCOMES:** |
| Methods of instruction:  Lecture, Class discussions and/or interactions, online activities, written paper and exams |

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| **ATTENDANCE AND PROCEDURES:** | |
| **MAKE-UP POLICY**: ***No make-up exams will be given***.  Students will be allowed to *drop one* 100-point valued exam grade during the semester.  This should cover any illness, emergency, or other. You should bank this opportunity thereby allowing you to DROP one 100-point grade if you have taken all tests.  Contact instructor ***before*** exam if you plan to miss it.    **ATTENDANCE:**  Students are expected to be prepared & present in lecture sessions.  Students are responsible for material covered in each session & must be aware of any  changes in exam schedule.    **EXTRA CREDIT**: **No** extra credit is given.  Students need to spend their time on required  material. | |
| **LIBRARY AND ON-LINE REFERENCE MATERIALS:** |
| The **Miley** **Library** serves as IRSC's main library.  The library is an information place providing professional assistance, library books and media, and access to the library's electronic resources.  There is an extensive online database system also available through IRSC’s website: [www.irsc.edu](http://www.irsc.edu) . |

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| **STUDENTS WITH DISABILITIES POLICY:** |
| Indian River State College provides reasonable accommodations to students with documented disabilities through the Educational Services Division / Student Disability Services Office.  The rights of students with disabilities which pertain to post-secondary education are provided under **Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990.** These laws prohibit discrimination by institutions to "otherwise qualified" students with disabilities. This enables such students to have an equal opportunity to benefit from the education offered by those institutions. |