

**Department: Life Sciences (Biology) Central Campus, Houston Community College**

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| General Biology II  Summer 2, 2016  BIOL 1407, CRN # 12906 |

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| Course location and times: | | Central Campus, Learning Hub  8 am – 12:45 pm: Mon/Wed, Rm 315 and Tues/Thurs, Rm 316 |
| Course semester credit hours: | | 4 Semester Credit hours |
| Course contact hours: | | 96 total hours; 48 hrs lecture, 48 hrs laboratory/activities |
| Course length: | | 5 weeks |
| Instruction type: | | In-person, Lecture and Lab |
| Instructor: | Dr. Brian C. Mahon, PhD. | |
| Phone: | 713-718-6050 | |
| Email address: | brian.mahon@hccs.edu | |
| Office location / hours: | Central Campus LHSB room 313,  Monday – Wednesday, 1 pm – 2 pm | |

Course Description:

It includes a study of the broad diversity of organisms in the five kingdoms, evolution, animal behavior, and basic ecology. This course is designed to give basic knowledge of life sciences to students going for biology major or applied health sciences.

Course Prerequisites:

This course has a prerequisite of BIOL 1406 (General Biology I).

**Course Objectives:**

  1.  To establish an understanding of the major historical events in evolutionary biology and their impact on the formulation of evolutionary and ecological principles.

    2.  To describe basic cell physiology as it relates to biochemistry, metabolism, nutrition, and gas exchange.

    3.  To demonstrate knowledge of the basic principles of taxonomy, and of taxa.

    4.  To demonstrate knowledge of basic plant and animal structure at the level of the cell, of tissue/organ systems and of the organism as a whole.

    5.  To demonstrate skill in basic laboratory methodology.

You are spending a good deal of time, energy and money on this course – please, make the most of your investment! It takes approximately **2-3 hours of study time for each hour of class time to master the material**. This class will have around 96 contact hours (4 hr. credit).

The **class and study time necessary to succeed in this class will be close to 300 hours!**

Instruction Methods:

The primary focus of the course will be on instructor lectures including illustrations, PowerPoint presentations, animations, group activities and assigned textbook readings.

Lecture material will correspond to the topics covered from textbook, but your instructor may include more detail on certain topics. Lecture may be included during lab sessions to clarify or detail concepts and utilize the complete scheduled class times.

Topics and concepts covered during lecture, activities, trips, or included in the assigned reading will be included in exams.

Laboratory sessions will include exercises from the laboratory manual and/or posted to the Learning Web.

Course Student Learning Outcomes:

1. To state observations and inferences leading to Darwin's Theory of Evolution by means of natural selection, including perform an experiment in population genetics and analyze the data using the Hardy-Weinberg equations; to understand the importance of fossils and be able to calculate the age of a fossil by means of isotopic decay.

2. To explain the origin of species, the history of life on early Earth, and to identify the key events in life's history, including the origins of single-celled organisms and the colonization of land.

3. To describe the evolutionary history of biological diversity, from Bacteria / Archaea to single celled eukaryotes, plants, fungi, and ultimately to animals/humans, including the structures, nutrition, reproduction, and characteristics of such organisms.

4. To compare and contrast taxonomic, morphological, digestive, and reproductive characteristics of Mollusca, Annelida, Arthropoda, Chordata, and Vertebrata in the Kingdom Animalia.

5. To understand the basic principles of animal form and function, including feedback control/homeostasis, to include the basic anatomy and physiology from the following animal organ systems: digestive, cardiovascular, respiratory, immune, excretory, endocrine, reproductive, and nervous/sensory systems.

6. To develop critical thinking, scientific problem-solving, and communication skills by successfully participating in a case study or course-specific research project.

7. To apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes, anatomical models, and other laboratory equipment to collect and analyze data

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| Student Assignments: | Students are required to read assigned chapters.  Additional announced and unannounced quizzes during lecture or lab may be conducted throughout the semester. |
| Student Assessments: | Students will be accessed via lecture and laboratory examinations, project oral report, lab manual and final lecture and lab examinations. |
| Instructional Materials: | **Text Book**: BIOLOGY: Tenth Edition by Reece, et. al.. (Sold as Biology Volume II for HCC)  **Laboratory Manual**: General Biology 2: Laboratory Manual 2nd Edition, A Hands-on Experience. Editor: J. Wagle  **Web resources:** My Learning Web Page & Biology study pages: <http://hccs.edu/biologylabs>  **Pearson Mastering Biology:**  Mastering Biology is a study tool that you will use during the semester. I have assigned weekly homework assignments for each chapter that will be help you get ready for exams. These assignments will be due before each unit lecture exam. With your Campbell Biology textbook you received an access code for Mastering Biology. The url for the website is [www.pearsonmastering.com](http://www.pearsonmastering.com)  The course number for you to register for this course is: **mahon41242** |

**Tentative Course Calendar: Schedule will be updated as needed.**

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| **Week** | **Lecture Schedule** | **Laboratory Schedule** \*  \*Labs may include being outdoors on some days. |
| 1 | Ch. 46-47 Reproduction / Development and Genetics | Pocket Mice Film |
|  | Ch. 52 An Introduction to Ecology and Biosphere \* | Lab. 1 Population Genetics |
|  | Ch. 22 Decent with modification |  |
|  | Ch. 23 The Evolution of Population | Chapter 52 Quiz in Mastering Biology \* |
|  | Ch. 24 The Origin of Species |  |
|  | Ch. 25 The History of Life on Earth | Radiometric dating and fossils \* |
| 2 | **Lecture Exam 1 (18 July)** | Library Research Orientation |
|  | Ch. 26  Phylogeny and the Tree of Life | Phylogentic tree activity \* |
|  | Ch. 27  Bacteria and Archaea / Ch. 28  Protists | Lab. 2 Prokaryotes |
|  | Ch. 31  Fungi | Lab. 3 Single-celled Eukaryotes (Protista) |
|  | Ch. 29  Plant Diversity I: How Plants Colonized Land |  |
|  | Ch. 30  Plant Diversity II: The Evolution of Seed Plants | **Hermann Park Lab Field Trip:** Plant Diversity  **(required trip) \*** |
| 3 | Lecture Exam 2 (25 July) | Lab. 4 Kingdom Plantae |
|  | Ch. 32 An Introduction to Animal Diversity | Lab. 5 Animal Diversity |
|  | Ch. 33 Invertebrates | LAB EXAM 1 (28 July) |
|  | Ch. 34 Vertebrates | Lab. 6 Primate Evolution |
|  | Primate Evolution \* | Lab. 7 Animal Tissues |
|  | Ch. 40 Basic Principles of Animal Form and Function |  |
| 4 | **Lecture Exam 3 (1 Aug)** | Lab. 9 Digestive System |
|  | Ch. 41 Nutrition | Lab. 10/11 Circ. / Resp. Systems |
|  | Ch. 42 Circulation / Gas Exchange |  |
|  | Ch. 48-49 Neurons/ Nervous Systems | Lab. 16 Nervous / Sensory Systems / Lab. 12 Pig  Dissection |
|  | Ch. 50 Senses |  |
| 5 | **Oral Presentations\*** / Unfinished Business | **LAB EXAM 2 (9 Aug)** |
|  | Final Exam: (looks like Wednesday, Aug 10th) |  |
|  | Lecture Exam 4 = Non-comprehensive |  |

\* Indicates Chapters to be read on your own in support of Activities.

\* Project topics and due dates will be discussed in class.

\* Indicates activities / lab handouts that will be posted on Learning Web for download.

**Note that your instructor reserves the right to change the schedule as needed at any point during the course.**

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| HCC Policy Statement: ADA | Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Instructors are authorized to provide only the accommodations requested by the Disability Support Services Office. If you have any special needs or disabilities that may affect your ability to succeed in college classes or participate in any college programs or activities, please contact the DSS office for assistance.  Central College, contact:  Central College Ability Services  1300B Holman, LHSB 106 Houston, TX 77004  Phone: 713/718-6164 Fax: 713/718-6179 |
| HCC Policy Statement: Academic Honesty | Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. |
| HCC Policy Statement: Student Success Policy | **Tutoring (available at the Learning Emporium)**  The college will provide tutoring for the students. More information will be available later.  **Early Alert process**  To help students avoid having to drop/withdraw from any class, HCC has instituted an **Early Alert process** by which your professor can “alert” you that you might fail a class because of excessive absences and/or poor academic performance. The counselors with work with you to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance. |
| HCC Policy Statement: Student attendance, repeaters, withdrawal deadline, international students | **Attendance**  Students are expected to attend classes regularly. Students are responsible for materials covered during their absences, and it is the student's responsibility to consult with instructors for make-up assignments.  Instructors check class attendance daily. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time). Note that 12.5% is approximately 2 classes and/or labs for a 4 credit hour summer course.  Habitual tardiness will not be tolerated. Students are expected to be in attendance for the entirety of the scheduled class and are responsible for completing assignments scheduled during their absence/s. It is the responsibility of each student to amend their professional/personal schedule to meet the class schedule  **Repeaters**  Students who repeat a course for a third or more times may soon face significant tuition/fee increases at HCC and other Texas public colleges and universities. Please ask your instructor / counselor about opportunities for tutoring / other assistance prior to considering course withdrawal or if you are not receiving passing grades.  **Withdrawals**  Withdrawal from the course after the official day of record (see current catalog) will result in a final grade of “W” on the student transcript and no credit will be awarded. It is the student’s responsibility to initiate and complete a request for withdrawal from any course. Students will be required to formally request a drop from their instructors prior to the administrative drop date deadline (**August 1st 2016)**. Abandoning the course or failing to formally drop, will result in a grade being given based on the work completed for the entire course (including missed exams).  The State of Texas has begun to impose penalties on students who drop courses excessively. For example, if you repeat the same course more than twice, you have to pay extra tuition. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than SIX total course withdrawals throughout their educational career in obtaining a certificate and/or degree.  **International Students**  Receiving a "W" in a course may affect the status of your student Visa. Once a W is given for the course, it will not be changed to an F because of the visa consideration. Please contact the International Student Office if you have any questions about your visa status and other transfer issues. |
| HCC Policy Statement: Title IX: | HCC is committed to provide a learning and working environment that is free from discrimination on the basis of sex which includes all forms of sexual misconduct. Title IX of the Education Amendments of 1972 requires that when a complaint is filed, a prompt and thorough investigation is initiated. Complaints may be filed with the HCC Title IX Coordinator available at 713 718-8271 or email at [oie@hccs.edu](mailto:oie@hccs.edu) |

**Instructor Requirements:**

**Basic requirements**

Students should be on time for class and be prepared with required materials including textbooks and lab manuals on each day of class. Full class attendance is required including lecture and lab portions. Full attention during lecture and lab is required.

Student is expected to review the lecture and lab schedule sheet and accordingly prepared before the class begins.

**Lab policy**

Lab safety is stated in lab manual. Lab rules and regulations will be discussed during the first lab and will be adhered to at all times. Each student is responsible for cleaning up after labs, this includes glassware, utensils, specimens/models and other material used during lab time **(clean up is not covered by your lab fees).**

Each student should arrive at the laboratory on time, with his or her laboratory manual. Student should review the lab schedule sheet, read the lab exercise scheduled and prepared to start the experiment. Experiments may be performed in groups. Each student is responsible for completing the laboratory reports at the end of each lab.

**Classroom conduct**

Students are expected to conduct themselves as adults. This includes courteous and respectful behavior towards instructor and classmates. Disruptive behavior or any behavior that interferes with any educational activity being performed by the instructor will not be allowed. Additionally, no student may interfere with his/her fellow students’ right to pursue their academic goals to the fullest in an atmosphere appropriate to a community of scholars. Disruptive behavior may result in removal from the class.

**Phones/electronic devices**

Absolutely no phone or other personal electronic devices are to be used during class (lecture and lab). This includes making or taking a call, reviewing messages, texting, playing games, checking email, surfing the web, anything that involves a phone or other personal electronic device. If your work or family situation requires that you be available via phone, your phone can be on vibrate mode and you can take the call during our regular scheduled breaks or you can exit the class to review the call. Notify your friends, family, employers, and anyone else who regularly contacts you that you will be in class and that you should be contacted only when necessary. The taking of calls during class is not only disruptive but it is also discourteous to classmates and the instructor.

**Testing procedures**

**Be sure to arrive early for your examinations. There are time limits for exams. You will not be given extended time for testing if you arrive late. Entering and exiting the lecture room or lab room is not permitted once exams have begun. Please be sure to use bathroom before the Exam.**

**Examination format**

Lecture exams will include multiple choice questions and sometimes short answer questions or questions of other format when I deem appropriate.

**Grades**

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| HCC Grading Scale: | A = 90-100%  B = 80-89%  C = 70-79%  D = 60-69%  F = less than 60% |

**Instructor Grading Criteria:**

Students must adhere to testing schedule. Failure to take a test (lab or lecture) will result in a “0” for the missed exam. No makeup exams will be arranged except for work, family, or personal (health) emergency, and only if documented. You must present with your Biome group on the scheduled date.

**Grade Calculation**

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| Activity | Score calculation | Grade | Your Grade |
| 5/6 Lecture exams &  Lab Practical exams | Average of 5 best scores, 70% | 70 |  |
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| Biome Group Project \* | 10% | 10 |  |
|  |  |  |  |
| Lab reports / and Activities | 10% | 10 |  |
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| Mastering Biology | 10% | 10 |  |
|  |  |  |  |
| Final Score | 100% | 100 |  |

**\*this grade depends on active participation in the project and Chpt. 52 quiz.**