

CENTRAL CAMPUS

## BIOLOGY 2416 /GENETICS/

**Summer 2016, COURSE NUMBER** **16862**

###### Instructor: Dr. Brian C. Mahon

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Room LHSB 313

**TEXTBOOK:** Pierce, Genetics: A Conceptual Approach 5th Edition (online ebook and Launch Pad system is free for Summer Students) information will be given in class

**LECTURES:** **Tuesday/Thursday: Room 403 12:45 pm – 5:30 pm**

**LABS: Monday/Wednesday: Room 307**  **12:45 pm – 5:30 pm**

#### Office Hours: Tuesday – Thursday Room 313 11 – 12 pm

**COURSE DESCRIPTION**: Study of the principles of molecular and classical genetics and the function and transmission of hereditary material (DNA). Also will include ***population genetics*** and ***quantitative genetics***.

**EMAIL:** You will need an email account. Outside class, I will communicate primarily by email. You are responsible for checking your email frequently

**PREREQUISITE: BIOL 1406 (General Biology I)**

# GENERAL GUIDELINES

1. **ATTENDANCE:** Roll will be taken, and I expect students to attend all classes. Good class attendance is absolutely essential to do well in this course! **I reserve the right to drop a student after missing in excess of 12.5% of the hours of instruction.** It is a good idea to exchange names and phone numbers with others in the class so that you can obtain the information you missed as quickly as possible. In case of a prolonged absence (2 or more class meetings), the instructor should be notified. In the event you are absent, it is your responsibility to check for information you missed as a result of your absence.
2. **NOTES:** Slides for each lecture will be posted on the Learning Web. It is your responsibility to access and print the slides if you wish. You MAY NOT share these files with anyone outside of class without express permission of the instructor, nor may you post any part online. You must take your own notes and read the textbook to do well in this class! Anything that I discuss in class is fair game for an exam.
3. **EXAMS:** Exams will be given at the beginning of class time and you will have 90 minutes to complete the exam. After the first exam has been completed, submitted, and that student has left the room, no more exams will be passed out. **DON’T BE LATE TO AN EXAM!** Restroom breaks are not allowed during the exam.
4. **DUE DATES:** If you are absent for any reason, you will not be allowed to make up missed in-class assignments from that day. Late homework/lab assignments will be accepted up to the next class meeting. I DO NOT accept assignments via email.
5. All phones and beepers must be turned off or be in silent (courtesy) mode. You may not leave the room during a test to answer a phone call. Should this occur your test will be taken up immediately. There will be no use of cell phones in the laboratory. I will allow the use of laptops in class, but only if you are using them for note taking purposes.
6. **LAB REPORTS:** Although you may discuss data with your lab partner, each lab report must be an individual effort (NO copying) and must be turned in separately when due. The lab reports will total 10% of the course grade. Unstapled lab reports and other assignments will not be accepted.
7. ***LABORATORY SAFETY. Students are expected to abide by the rules of safety at all times during the laboratory exercises. Safety rules will be reviewed in the first lab session.***
8. **Genomics Modules:** Two modules are to be completed weekly from those made available. Some class time will be provided when possible.
9. **Genetic disorder seminar**: Each should prepare and present one seminar during the last class period. I will explain what those entail in the second week. The presentations will total 10% of the course grade.

 **10. STUDENT HANDBOOK**- important information for all students. Also contains the mission statement of the Houston Community College System (available online at HCCS home page.)

**Grade Determination:**

|  |  |  |
| --- | --- | --- |
| **Your grade will be determined by the following** | **Details** | **Percent of Final Average** |
| Lecture Exams | 4 Exams: T/F, short answer, multiple choice, essay | 60% |
| Online Launch Pad Work | Covering topics from Lecture Chapters | 10% |
| Lab Reports | Turned in following lab sessions |  10% |
| Genomics Modules | Using the NCBI web data base: details will be explained the first week | 10% |
| Genetic Condition Presentation | Week of Finals (5 July)  | 10% |
| Total: |  | 100% |

**Letter Grade Assignment:**

|  |  |
| --- | --- |
| Letter Grade | Final Average in Percent |
| A | > 89.5 |
| B | 80 – 89.5 |
| C | 70 – 79.5 |
| D | 60 – 69.5 |
| F | < 59.5 |

Tentative Instructional Outline: \*Note: Subject to Change\*

| **Class** **(Date)****9** |  |
| --- | --- |
| 1 (Jun 6) |  |
| 307 | Syllabus, Chapter 1, Chapter 2, Microscope Lab, Cells, Chromosomes |
| 2 (Jun 7) |  |
| 403 | Chapter 3, Chapter 4, Chapter 5 |
| 3 (Jun 8) |  |
| 307 | Mitosis Meiosis Lab, Punnett Squares/Pedigree, Chapter 24, Quantitative Genetics Workshop |
| 4 (Jun 9) |  |
| 403 | Chapter 5, Chapter 6, Chapter 7, Genomics Modules  |
| 5 (Jun 13) |  |
| 307 | **LECTURE EXAM 1** Micropipetting/Centrifugation, DNA ExtractionPart b) DNA Repair, Transposable Elements |
| 6 (Jun 14) |  |
| 403 | Genetic Diseases Presentations Intro, Chapters 8 - 12 |
| 7 (Jun 15) |  |
| 307 | Fruit Flies Lab part 1-3, Polytene chromosomes  |
| 8 (Jun 16) |  |
| 403 | Chapters 13 -15, Genomics Modules |
|  9 (Jun 20) |  |
| 307 | **LECTURE EXAM 2**PCR, Cloning Part 1-3 |
| 10 (Jun 21) 212121) |  |
| 403 | Chapters 16 -18 |
| 11 (Jun 22) |  |
| 307 | Cloning part 4, Transformation, Flies part 4  |
| 12 (Jun 23)  |  |
| 403 | Chapters 19 -21, Genomics Modules  |
| 13 (Jun 27) |  |
| 307 | **LECTURE EXAM 3** Analysis of transformation, Fingerprint analysyis, ABO Bloodtyping  |
| 14 (Jun 28) |  |
| 403 | Chapters 22 -24 |
| 15 (Jun 29)  |  |
| 307 | Population Genetics Case Study, Forensics DNA Fingerprinting |
| 16 (jun 30) |  |
|  | Chapters 25 & 26 |
| (Jul 4) | **Holiday** |
| 17 (Jul 5) | **Presentations (403)** |
| (Jul 7) | **Final Exam: Thursday July 7th (307)** |

##### *IMPORTANT DAYS*

See calendar for exact date and time/ withdrawal, drop, holidays…etc. Also pay attention to HCC course withdrawal policy.

Jun 9th, 2016 Official date of record.

Jul 10th 2016 Instruction ends

**The final withdrawal deadline for regular term is Jun 27th 2016 at 4:30pm.** Classes of other duration (mini-term, flex-entry, 8-weeks, etc.) may have different final withdrawal deadlines. Please review HCC’s online “Academic Calendars by Term” or contact the HCC Registrar’s Office.

**It’s your responsibility to contact me regarding withdrawal prior to the withdrawal deadline; your absences or disappearance from the class doesn’t mean you will receive a (W). You will receive a (W) only if you contact me prior to the deadline.**