

Tentative lecture schedule (subject to change)

## PCB 3063-GENETCIS

Summer 2016, Tu-Th 12:45-2:30 in SIPA 125 (University Park).

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### Course Description

This is a required course to provide *undergraduate students majoring in Biology or Marine Biology* with an in depth look at the structure and function of nucleic acids (DNA/RNA) during replication, transcription and proteins translation.

Topics include the basic principles of DNA replication, recombination, chromosomal variations, heredity and population genetics, DNA transcription into RNA, mRNA translation to produce proteins. Gene expression in: 1- viruses, 2- prokaryotes and 3- eukaryotes.

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### Learning Goals (Objectives)

- To gain a solid knowledge on the chemical nature, structure and function of nucleic acids.
- To understand gene expression: prokaryotes, eukaryotes and viral.
- To become familiar with appropriate vocabulary, primary literature and methods used by scientists to study Genetics.

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### Instructor

**Dr. M. Alejandro Barbieri**

Office: AHC1 318C

E-mail: [barbieri@fiu.edu](mailto:barbieri@fiu.edu)

Course Website: <http://www.fiu.edu/~barbieri>, click on teaching--Genetics.

Office Hours: **Tu-Th: 3:00-5:00 pm or by appointment ONLY.**

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### Course Materials

#### Text (Required)

Principles of GENETICS, 7 Ed. by P. Snustad  
ISBN: 978-1119142287

#### Text (Recommended)

Genetics: A Conceptual Approach, 5th Ed by B. A. Pierce  
ISBN: 978-1464109461

*Additional readings* will be posted on the website. Although these will be announced in class, students are responsible for checking the class web page regularly for announcements and assignments. Students should bring copies of the additional material to class to help them participate in class discussion.

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### Attendance

Students are expected ***to attend class regularly, to arrive on time, and to remain in class until the end of the class period.*** Class attendance will help you master the course material.

Exam questions may cover material not found in the textbook. Class assignments (extra credits) are required and it will be collected for grading.

If you miss class, you will still be responsible for any material disseminated or work that is assigned or due in your absence.

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### Grading Policy

**Exams:** There will be ***four (4) exams***, which will include material covered in **lecture** and **appendix** reading. Although the exams are not cumulative per se, you may be asked to synthesize material from various units. Exam questions may consist of any combination of multiple choices, fill in the blank, short answer, labeling of figures and matching. If exam dates (or the material

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covered on the exam) need(s) to be modified, students will be given at least one week's notice in class. Exams will be closed book/note. You will be asked to show “your Panther ID” card on exam day so be sure to bring it to class.

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### Exams:

Four (4) exams.

Exam Format.

Each exam=40 questions=**20 points** (1question=0.5 point).  
(Maximum=80 points).

Exam Length.

Exam's time: 1 hr from 12:50 to 1:50.

Final exam= **“NO”**

Activities: (Maximum=20 points)

1- **Class assignments**: One assignment=**10 points**

See details below

2- **Quizzes**: Four quizzes=**10 points** (1quiz=2.5 points).

Exam Format.

Two questions. Each question:1.25 points

Quiz Length.

Quiz's time: 30 min from 2:00 to 2:30.

**NO make-up exams will be given!**

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### Grading system

**A: 90-100%**

**B: 80-89%**

**C: 70-79%**

**D: 60-69%**

**F: <60%**

A student who earns a failing grade based on the total number of points and fails to complete at least 60% of the course requirements will receive a grade of **F0** (F zero).

A grade of **IN (Incomplete)** will only be given in extremely rare circumstances where unusual circumstances occur after the Drop date. For a student to receive an **IN**, the student must have completed at least half the course work and have a passing grade at the time of the incident.

Professional documentation, including an address and telephone number must demonstrate that the student cannot complete the course due to factors beyond their control (severe illness, accident, death in the immediate family, etc.).

The student must complete the course within two terms; otherwise the grade will automatically default to an **F**.

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### Academic Integrity

Collaboration is an important aspect of scientific discovery as well as learning.

While it is encouraged that students study together and share information with partners as appropriate, all assignments should be written independently by each student (unless otherwise required for a group assignment).

When appropriate, sources (including the internet and personal communication) should be cited. **Cheating** and **plagiarism** are serious offenses and are NOT acceptable.

Plagiarism is the presentation of another's work or ideas (either published or unpublished) as one's own. This includes both quoting verbatim as well as paraphrasing ideas without appropriate citation. If found to have cheated or plagiarized, or have enabled someone else to do so, the student will be subjected to disciplinary action that will include receiving a zero that cannot be dropped for the assignment/exam.

A second occurrence will result in the student receiving an **F** for the course. If you are aware of such academic dishonesty, report it to the professor.

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### Behavioral Misconduct

We (students and instructors) are responsible for maintaining an appropriate, orderly, learning environment in accordance with the mission of the University.

Disruptive behavior will NOT be tolerated. **All cell phones must be turned off.** During exams all electronic devices must be turned off and put away. **Students in attendance should listen and participate appropriately.**

Students who fail to adhere to the behavioral expectations

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outlined by the instructor and presented in the FIU Student Handbook may be subjected to discipline in accordance with the procedures described in the FIU Student Handbook. The student handbook also describes the University's policy on sexual harassment.

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### **ADA Accommodation Statement**

If the student has a documented disability as described by the Rehabilitation Act of 1973 (PL 933-112 Section 504) and Americans with Disabilities Act (ADA) and would like to request academic and/or physical accommodations, please contact the Disability Resource Center (tel. 305-348-3532, TTY/TDD 305-348-3852), as soon as possible. Course requirements will not be waived, but reasonable accommodations be provided as appropriate. It is then the student's responsibility to contact and meet with the instructor as early as possible.

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### Class assignments

#### Genetic Disease Project

Dr. Barbieri will choose one of the diseases below for “each team”  
It is each person’s responsibility to research and prepare 3-4 pages description of the elected disease

You need to be:

- Concise
- Clear
- Work as a team
- DO not include pictures, graphs, models, cartoons, etc

One member of the group will be responsible for insuring this research project is completed. Dr. Barbieri will be accepting research project in person during class as well as during office hours till **7/14/2016 (4:59 pm)**. **Each member of the team MUST sign the research project.**

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### Selected Genetics Disease

- 1-Cystic Fibrosis
- 2-Huntington's Disease
- 3-Tay-Sachs disease
- 4-Ataxia Telangiectasia
- 5-Neurofibromatosis
- 6-Down syndrome
- 7-Color blindness
- 8-Haemophilia
- 9- Duchenne muscular dystrophy
- 10- Amyotrophic lateral sclerosis (ALS)
- 11- others

### **Genetics Research Project**

- Please use Arial 11 or Times 12
- Margins: 1", 1", 1", 1"

### Cover page: (1 page)

Group number, Name, PID, date and signature of each student.

### Project's description

- Genetics of the disease (2 pages)
- Pathophysiology of the disease (1 page)

### Bibliography /References (1 page)

- 5 to 10 references (MLA In-Text Citations)



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# PCB 3063 GENETICS-2015

5/17/2016	Introduction	L1
5/19/2016	The Science of Genetics	CH1
5/19/2016	Cellular Reproduction	
5/24/2016	The Basic Principles of Inheritance: Mendelism	CH2
5/24/2016	Punnett Squares/ Chi Square Problems/ Pedigree Analysis	CH23
5/26/2016	Population and Evolution Genetics	CH24
5/31/2016	Population and Evolution Genetics	CH24
<b>6/02/2016</b>	<b>Review#1/ Quiz#1</b>	
<b>6/07/2016</b>	<b>EXAM #1</b>	
6/09/2016	DNA and the Molecular Structure of Chromosomes	CH9
6/14/2016	Replication of DNA and Chromosomes	CH10
6/16/2016	Transcription and RNA Processing	CH11
<b>6/21/2016</b>	<b>Review#2, Quiz #2</b>	
<b>6/23/2016</b>	<b>EXAM #2</b>	
6/28/2016	Translation and the Genetic code	CH12
6/28/2016	Mutation, DNA Repair and Recombination	CH13
6/30/2016	Mutation, DNA Repair and Recombination	CH13
6/30/2016	Transposable Genetic Elements	CH17
7/05/2016	Transposable Genetic Elements	CH17
<b>7/07/2016</b>	<b>Review #3, Quiz #3</b>	
<b>7/12/2016</b>	<b>EXAM #3</b>	
<b>7/14/2016</b>	<b>Genetic Disease Project-Deadline</b>	
7/14/2016	Genetics of Bacteria and their Viruses	CH8
7/19/2016	Regulation of Gene Expression in Prokaryotes	CH18
7/21/2016	Regulation of Gene Expression in Eukaryotes	CH19
7/21/2016	The Genetic Basic of Cancer	CH21
<b>7/26/2016</b>	<b>Review #4 Quiz #4</b>	
<b>7/28/2016</b>	<b>EXAM # 4</b>	