**Graduate Programs—NEW COURSE PROPOSAL**

**DEPARTMENT:** BIOMEDICAL SCIENCE  
**COLLEGE:** COLLEGE OF MEDICINE

**RECOMMENDED COURSE IDENTIFICATION:**

**PREFIX** PC.B  
**COURSE NUMBER** 6063  
**LAB CODE** (L or C) No Lab

**(TO OBTAIN A COURSE NUMBER, CONTACT MJNINGS@FAU.EDU)**

**COMPLETE COURSE TITLE:** Advanced Molecular and Cellular Biology

**CREDITS:** 3  
**TEXTBOOK INFORMATION:** Molecular Biology of the Cell, Fifth Edition: The Problems Book  
By Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter

**EFFECTIVE DATE:** Spring 2016

**GRADING (SELECT ONLY ONE GRADING OPTION):** REGULAR X SATISFACTORY/UNSATISFACTORY

**COURSE DESCRIPTION:** MCB is a course designed to provide students with a basic background and advanced topics in cell and molecular biology. Emphasis will be placed on human physiology and disease. Although some review level introductory information will be presented, this is a graduate course and it is strongly recommended that students complete undergraduate Organic Chemistry, Cell Biology, and Biochemistry as prerequisites for this course.

**PREREQUISITES:**

- ORGANIC CHEMISTRY 1
- CELL BIOLOGY
- BIOCHEMISTRY

**COREQUISITES:**

**REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL):** INSTRUCTOR PERMISSION REQUIRED

**MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE:** BIOMEDICAL FACULTY OR COM FACULTY

**Faculty contact, email and complete phone number:**
Dr. Andrew Oleinikov  
aoleinikov@fau.edu  
561-297-4424

**Approved by:**

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3. Consent from affected departments (attach if necessary)

Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

FAUnewgrad—Revised September 2013
Course #  PCB (TBB) - 3 credits
Course Registration:  Instructor Permission
Course hour:  T R 11-12:20 (to be confirmed)
Place:  TBD
Course Pre-requisites:  Organic Chemistry 1
Cell Biology
Biochemistry

Course Instructor:  Dr. Andrew Oleinikov
Office 310, Lab 305
297-4424 office /297-0201 lab
Office hours-Fridays 2-4:30 or by appointment

By Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter

Course Description:
MCB is a course designed to provide students with a basic background and advanced topics in cell and molecular biology. Emphasis will be placed on human physiology and disease. Although some review level introductory information will be presented, this is a graduate course and it is strongly recommended that students complete undergraduate Organic Chemistry, Cell Biology, and Biochemistry as prerequisites for this course. Students will be expected to give group presentations on topics presented in the course. Students will each prepare and submit 2 exams questions for their presentations. Students will be evaluated based on their cumulative performance on one mid-term and one final exam. Exams will be cumulative and will include material and questions presented by students. Slides used in lectures will be posted after the lectures are presented on blackboard. Attendance is not mandatory but students are responsible for knowing all information presented during lecture exceeding the information on posted slides. The instructor reserves the right to alter the schedule or content of the course at anytime.

Course Objectives:
1. Understanding physical-chemical basis of biological processes and cell functioning
2. Understanding effects of evolutionary forces on shaping molecular and cellular processes
3. Developing ability to work with current scientific literature, to simplify complex problems to basic components, and to relate knowledge of molecular biological processes to pathological states
Course Schedule:

January 2015
Tuesday 6th: Intro to the Course
Thursday 8th: Cells, Genes, and Information
Tuesday 13th: DNA Structure and Function
Thursday 15th: Cellular Genomes and Nuclear Structure
Tuesday 20th: Cellular and DNA Replication
Thursday 22nd: DNA Repair and Mutagenesis
Tuesday 27th: RNA Synthesis
Thursday 29th: RNA processing

February 2015
Tuesday 3rd: Regulation of Prokaryotic Gene Expression
Thursday 5th: Regulation of Eukaryotic Gene Expression
Tuesday 10th: Synthesis and Transport of Proteins
Thursday 12th: Exam Preparation Day

February 16-20: MIDTERM EXAM 1
Tuesday 17th: Technology II
Thursday 19th: Exam Preparation Day
Tuesday 24th: Technology 1
Thursday 26th: Technology 2

March 2015
Tuesday 3rd: SPRING BREAK
Thursday 5th: SPRING BREAK
Tuesday 10th: Cell Membrane Structure and Function
Thursday 12th: Cell Organization and Function
Tuesday 17th: Signal Transduction
Thursday 19th: Cell Biology of Cancer
Tuesday 24th: Cell Biology of Immunity

April 2015
Thursday 2nd: STUDENT PRESENTATIONS
Tuesday 7th: STUDENT PRESENTATIONS
Thursday 9th: STUDENT PRESENTATIONS
Tuesday 14th: STUDENT PRESENTATIONS
Thursday 16th: Exam Preparation Day
Tuesday 21st: In Class Review

April 23-29: FINAL EXAM

Grading:
Student presentation: 10%
Midterm Exam: 40%
Final Exams: 50%
**Supplemental Readings:** Additional Research articles will be used in class as well as material from Dr. Pollack's book “Cells, gels, and the engines of life”.

**Course Policies:** Makeup tests and late work are not allowed unless an approved physical problem or schedule conflicting with University-approved activities.

**Classroom etiquette:** Please refer to the FAU Catalog and Student Handbook. Compliance with university rules and regulations is expected of all students.

**Academic Honor Code:** Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility.

The FAU Honor Code requires a faculty member, student, or staff member to notify an instructor when there is reason to believe an academic irregularity is occurring in a course. The instructor must pursue any reasonable allegation, taking action where appropriate. The following constitute academic irregularities:

1. The use of notes, books or assistance from or to other students while taking an examination or working on other assignments, unless specifically authorized by the instructor, are defined as acts of cheating.
2. The presentation of words or ideas from any other source as one’s own is an act defined as plagiarism.
3. Other activities that interfere with the educational mission of the University.


**Students With Disabilities:** In compliance with the American Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) – 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.