

# FLORIDA ATLANTIC UNIVERSITY™

## Undergraduate Programs—COURSE CHANGE REQUEST<sup>1</sup>

UUPC APPROVAL \_\_\_\_\_  
 UFS APPROVAL \_\_\_\_\_  
 SCNS SUBMITTAL \_\_\_\_\_  
 CONFIRMED \_\_\_\_\_  
 BANNER POSTED \_\_\_\_\_  
 CATALOG \_\_\_\_\_

DEPARTMENT: BIOLOGICAL SCIENCE COLLEGE: COLLEGE OF SCIENCE

COURSE PREFIX AND NUMBER: PCB 4023 CURRENT COURSE TITLE: MOLECULAR AND CELL BIOLOGY

CHANGE(S) ARE TO BE EFFECTIVE (LIST TERM): FALL 2013 \_\_\_\_\_ TERMINATE COURSE (LIST FINAL ACTIVE TERM):

<p><b>CHANGE TITLE TO:</b></p> <p><b>CHANGE PREFIX FROM:</b> _____ <b>TO:</b> _____</p> <p><b>CHANGE COURSE NO. FROM:</b> _____ <b>TO:</b> _____</p> <p><b>CHANGE CREDITS<sup>2</sup> FROM:</b> _____ <b>TO:</b> _____</p> <p><b>CHANGE GRADING FROM:</b> _____ <b>TO:</b> _____</p> <p><b>CHANGE WAC/GORDON RULE STATUS<sup>3</sup></b>                  ADD* _____ REMOVE _____</p> <p><b>CHANGE GENERAL EDUCATION REQUIREMENTS<sup>4</sup></b>                  ADD* _____ REMOVE _____</p> <p><small>*WAC and General Education criteria must be clearly indicated in attached syllabus. For WAC Guidelines: <a href="http://www.fau.edu/WAC">www.fau.edu/WAC</a>. Please attach General Education Course Approval Request: <a href="http://www.fau.edu/deanugstudies/GeneralEdCourseApprovalRequests.php">www.fau.edu/deanugstudies/GeneralEdCourseApprovalRequests.php</a></small></p>	<p><b>CHANGE DESCRIPTION TO:</b></p> <p><b>CHANGE PREREQUISITES/MINIMUM GRADES TO*:</b></p> <p><u>EXISTING</u>                  BCH 3033</p> <p><u>NEW PRE/REQ.</u>                  PCB 3063 and BCH 3033</p> <p><u>MINIMUM PASSING GRADE C-</u></p> <p><b>EXISTING COREQUISITES:</b></p> <p><b>CHANGE COREQUISITES TO*:</b></p> <p><b>CHANGE REGISTRATION CONTROLS TO:</b></p> <p><small>*Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).</small></p>
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Attach syllabus for ANY changes to current course information.

<p>Should the requested change(s) cause this course to overlap any other FAU courses, please list them here.</p>	<p>Please consult and list departments that might be affected by the change(s) and attach comments.<sup>5</sup></p>
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Faculty contact, email and complete phone number:  
 David Binninger; binninge@fau.edu; 561.297-3323

<p><b>Approved by:</b></p> <p>Department Chair: <u>David Binninger</u></p> <p>College Curriculum Chair: <u>J. S. H.</u></p> <p>College Dean: <u>D. B. Johnson</u></p> <p>UUPC Chair: <u>J. E. H.</u></p> <p>Undergraduate Studies Dean: <u>Edward Schmitt</u></p> <p>UFS President: _____</p> <p>Provost: _____</p>	<p><b>Date:</b></p> <p>Feb. 27, 2013</p> <p><u>3/21/13</u></p> <p><u>3/20/13</u></p> <p><u>3/22/13</u></p> <p><u>3/22/13</u></p> <p>_____</p> <p>_____</p>	<ol style="list-style-type: none"> <li>1. Syllabus must be attached; syllabus checklist recommended; see guidelines and checklist: <a href="http://www.fau.edu/academic/registrar/UUPCinfo">www.fau.edu/academic/registrar/UUPCinfo</a></li> <li>2. Review Provost Memorandum: <b>Definition of a Credit Hour</b> <a href="http://www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf">www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf</a></li> <li>3. WAC approval (attach if necessary)</li> <li>4. Gen. Ed. approval (attach if necessary)</li> <li>5. Consent from affected departments (attach if necessary)</li> </ol>
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**PCB 4023-001 Molecular and Cell Biology (Section 24972): 3 Credits Tuesdays  
and Thursdays 2:00 p.m. - 3:20 p.m. GS 120, Boca Raton Campus**  
**Prerequisite: PCB 3063 and BCH 3033 With A Minimum Grade of C-  
Fall 2013**

Instructor: Tim C. Theisen, Ph.D. Office Hours: Tues and Thurs 3:30 p.m. – 5:00 p.m. or by appointment  
Boca Raton Office: TBD                      Davie Office: DW443, 954-236-1061                      e-mail: [ttheisen@fau.edu](mailto:ttheisen@fau.edu)

**Course Description:** Genetics at the molecular level as related to gene structure, function, variation and control with a comprehensive treatment of plant and animal cell structure and function. Basic concepts of cell physiology are treated.

**Course Details and Expected Learning Outcomes:** This course begins with a review of basic biochemistry, and then goes on to examine the molecular details of some fundamental cellular processes. These include DNA packaging, DNA replication, protein synthesis, control of gene expression, the synthesis and function of sub-cellular structures, cell cycle including apoptosis, and energy conversion. The course concludes with selected topics relating to how the eucaryotic cells of metazoans function in their multicellular habitat, including development of specialized cells and tissues, maintenance of tissue systems, cell signaling and stem cell tissue systems. This course will introduce new material as well as bring together many topics learned as individual lessons in earlier courses. After completing this course students will have learned how molecular switches, machines and other sub-cellular structures interact to accomplish the fundamental tasks required for cell survival and reproduction in single-celled as well as multicellular organisms.

**Course Format:** Lectures will follow PowerPoint presentations, and due to the amount of material that must be covered we often move very quickly. The PowerPoints will be posted onto Blackboard in advance of each lecture. You should print these out as handouts (or load them onto a laptop) and bring them to class each day. During the lecture you can then spend your time listening to the presentation and related discussions, adding notes to your slides as you see fit, instead of trying to write down every word that is said.

**Course Assignments:** At the end of this syllabus you will find a lecture schedule. There is a reading assignment listed alongside each lecture topic. These are ***REQUIRED*** readings, and they are to be completed ***BEFORE*** coming to lecture. It is expected that proper, thorough reading of these assigned sections and associated studying will take approximately 5-6 hours per assignment, or approximately 10-12 hours per week. Clearly, careful scheduling will be required in order to complete these assigned readings prior to each lecture.

**Course Examinations:** There will be four unit examinations, each worth 100 points. Examinations will consist of multiple choice questions based mostly on understanding fundamental concepts and how they relate to the mechanisms that have evolved.

**Missed Exams:** Make-up exams will be available only under ***exceptional*** circumstances as outlined in the FAU student handbook, and only if taken within 1 week of the missed exam. Any “curve” that may have been applied to the exam taken at the regularly scheduled time will not be applied to make-up exams. **Make-up exams will be in essay format.** .

**i>clicker**: Extra credit will be available for this course using the i>clicker system. Each student is responsible for obtaining an i>clicker transmitter and bringing it to every lecture (available at the bookstore). At some point during some (but not all) lectures, a multiple choice question will be put up on the screen. Students will answer the question using their i>clicker transmitter. Students will be awarded 1 point for answering the question (even if wrong), and an additional one point for a correct answer. There will be 10-15 questions distributed throughout the semester. These points will be added to the total of your exam scores for the class. Because this is extra credit, there is no penalty for not answering, however you can only earn extra credit points by answering. **Extra credit i>clicker points are only available in class at the time the question is presented; no extra credit points can be made up in the event a student is unable to attend a lecture.**

**You must register your i>clicker with this course in order to be able to use it. Registration will in-class or from the Blackboard course page for Molecular and Cell Biology.**

**In-class registration**: This is the preferred registration method, because it not only allows you to register your i>clicker, but it also provides you with a confirmation that your i>clicker is working properly. **In-class registration will begin on Thursday 5-16-12.** Simply bring your i>clicker to class, and follow the instructions that will be on the screen at the start of lecture. In-class i>clicker registration will be conducted at the start of lecture during the first three weeks of class.

**i>clicker registration using Blackboard**: It is possible to register your i>clicker using the Blackboard site, however this method will not provide you with any direct confirmation that your i>clicker transmitter is functioning properly. Therefore, it is highly recommended that you use the in-class registration method. To use Blackboard to register your i>clicker, simply go to Blackboard and log in to Molecular and Cell Biology. Click on “Tools”, then click on the “Register your i>clicker” icon, and follow the instructions provided.

**Grading**: The course grade will be determined from performance on four unit examinations, plus any extra credit i>clicker points that have been earned. Each exam is worth 100 points. Total course points = 400.

**Extra Credit**: The only extra credit available for this course is through the in-class i>clicker responses. These extra credit points are only available in class at the time the question is presented; no extra credit points can be made up in the event a student is unable to attend lecture. It is important to stay on top of the material, and seek assistance if you encounter any problems in understanding the material.

### **Grading Scale**

<b>Grade</b>	<b>Percentage</b>	<b>Grade</b>	<b>Percentage</b>
A	≥93	C	73-76
A <sup>-</sup>	90-92	C <sup>-</sup>	70-72
B <sup>+</sup>	87-89	D <sup>+</sup>	67-69
B	83-86	D	63-66
B <sup>-</sup>	80-82	D <sup>-</sup>	60-62
C <sup>+</sup>	77-79	F	≤59

**Missed Exam:** If a student misses an exam due to circumstances beyond their control, or for University-approved reasons (e.g. participation in University-approved activities, approved religious observance, etc.), then the instructor may approve a make-up exam. **All make-up exams will be essay format.** The student will be required to show proof of approved circumstance, and make-up exam must be taken within one week of the original exam date. **Making sure you take the exam at the regularly scheduled time is strongly encouraged.**

**University Policy on the Use of Electronic Devices:** “In order to enhance and maintain a productive atmosphere for education, personal communication devices such as cellular telephones and pagers are to be disabled in class sessions.” The only permissible use of a cellular telephone during class is to follow the PowerPoint, which may be loaded onto your phone rather than onto a laptop or printed out. However, if at any time a student appears to be using their smart phone for any other purpose (checking e-mail, texting, surfing the internet, etc.), they will be required to turn the phone off and will not be permitted to use it for any purpose the remainder of the semester. **It is highly recommended that you either print the PowerPoints as black and white handouts, or download them onto a laptop or tablet, and avoid using your smart phone for that purpose.**

**Disability policy statement:** In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation 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.

**Honor Code Policy Statement:** Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, 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. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at [http://www.fau.edu/ctl/4.001\\_Code\\_of\\_Academic\\_Integrity.pdf](http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf)

**Incomplete Grade:** Consistent with FAU policy, an incomplete grade will only be given to a student who fulfills *all* of the following criteria:

1. Misses coursework or exams due to an FAU approved emergency
2. Has a grade of C or better at the time
3. Submits evidence of the emergency and signs an incomplete agreement.

**Course Supplies:**

**Textbook: Molecular Biology of the Cell, Fifth Edition**

Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P.  
Garland Publishing, Inc. New York & London

An e-version of the textbook is available at <http://store.vitalsource.com/show/9781136844423>.

**In addition to the textbook, an i-clicker transmitter is required to receive extra credit.**

<u>Date Completed</u>	<u>Lecture Topic</u>	<u>Chapter</u>	<u>Assigned Reading to be</u> <u>Before Lecture</u>
Jan 8	Introduction to Molecular Cell Biology: Cells and Genomes	1	1–23, 26–32, vertebrate genome section pp 38–39
Jan 10	Cell Chemistry and Biosynthesis	2	45 – 55, 62 – 65, review 55 - 62
Jan 15	Cell Chemistry and Biosynthesis	2	65 – 86, 101 – 102, review panels
Jan 17	Proteins	3	125 – 152
Jan 22	Proteins	3	152 – 161, 164 – 187
Jan 24	DNA and Eucaryotic Chromosome Structure	4	195 – 206, 208 – 233
<b>Jan 29</b>	<b>Exam 1: Chapters 1 – 4</b>		
Jan 31	DNA Replication and Proofreading	5	263 – 294
Feb 5	DNA Repair and Recombination	5	295 – 326
Feb 7	Transcription	6	329 – 366
Feb 12	Translation	6	366 – 399
Feb 14	Control of Gene Expression	7	411 – 426, 432 – 447, 493 – 497
<b>Feb 19</b>	<b>Exam 2: Chapters 5 - 7</b>		
Feb 21	Membrane Structure	10	617 – 648
Feb 26	Membrane Transport and the Electrical Properties of Membranes	11	651 – 692 except 679
Feb 28	Intracellular Compartments and Protein Sorting	12	695 – 702, 704 – 710, 713 – 731, 734 – 745
<b>March 5</b>	<b>Spring Break</b>		
<b>March 7</b>	<b>Spring Break</b>		
March 12	Vesicular Traffic	13	749 – 751, 754 - 809
March 14	Energy Conversion	14	840 – 855
March 19	Energy Conversion	14	813 – 829
March 21	Cell Communication	15	879 – 902, 904 - 916
March 26	Cell Communication	15	921 - 944
<b>March 28</b>	<b>Exam 3: Chapters 10 - 15</b>		
April 2	Cytoskeleton	16	965 – 988, 992 – 1034
April 4	Cell Cycle	17	1053 – 1056, 1060 – 1092
April 9	Cell Cycle	17	1092 – 1112
April 11	Apoptosis	18	1115 – 1128
April 16	Cell Junctions, Adhesions, Extracellular Matrix	19	1131 – 1196
April 18	Stem Cells and Tissue Renewal (on DVD-ROM)	23	1417 – 1426, 1450 – 1458, 1476 – 1482
April 23	Topic to be Determined		
<b>April 30</b>	<b>Exam 4 Chapters 16 - 19, 23 1:15 p.m. – 2:30 p.m. ** Note special starting time for Exam 4 !!</b>		