

FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL¹

UGPC APPROVAL _____
 UFS APPROVAL _____
 SCNS SUBMITTAL _____
 CONFIRMED _____
 BANNER POSTED _____
 CATALOG _____

DEPARTMENT: BIOLOGICAL SCIENCES

COLLEGE: COLLEGE OF SCIENCE

RECOMMENDED COURSE IDENTIFICATION:

PREFIX PCB COURSE NUMBER 6026 LAB CODE (L or C) _____

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

COMPLETE COURSE TITLE: **Marine Molecular Biology**

EFFECTIVE DATE

(first term course will be offered)
 SPRING 2016

CREDITS²: 3

TEXTBOOK INFORMATION: Freeland, J.R. 2011. Molecular Ecology, 2nd Edition. Wiley-Blackwell. 464 pp. ISBN-13: 9780470748336

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

COURSE DESCRIPTION, NO MORE THAN THREE LINES: Examines emerging molecular technologies and their application in the marine sciences through a combination of lecture, discussion, and debates.

PREREQUISITES*: Graduate status

COREQUISITES*:

REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:

* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: PH.D. IN THE RELEVANT FIELD

Faculty contact, email and complete phone number:
 Dr. Joshua Voss
jvoss2@hboi.fau.edu
 (772) 242-2538

Please consult and list departments that might be affected by the new course and attach comments.³

Approved by:

Department Chair: _____
 College Curriculum Chair: _____
 College Dean: _____
 UGPC Chair: _____
 Graduate College Dean: _____
 UFS President: _____
 Provost: _____

Date:

1/30/14
 2/10/14
 2/16/14
 2/26/14
 2/26/14

1. Syllabus must be attached; see guidelines for requirements: www.fau.edu/provost/files/course_syllabus.2011.pdf
2. Review Provost Memorandum: **Definition of a Credit Hour** www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf
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.

Course Syllabi for Marine Molecular Biology

1. **Course title/number, number of credit hours**
Marine Molecular Biology – PCB 6026 – 3 credit hours
2. **Course prerequisites**
 - a. Graduate status
3. **Course logistics**
 - a. Term – Spring 2016, every other Spring thereafter
 - b. Notation if online course – The course is not offered online, but will be available via distance learning to additional campuses.
 - c. Class location and time (if classroom-based course) – To be determined
4. **Instructor contact information**
 - a. Instructor's name – Joshua Voss
 - b. Office address – Harbor Branch Lab II, Room 121
 - c. Office hours – To be determined
 - d. Contact telephone number – office (772) 242-2538, fax (772) 468-0757
 - e. E-mail address – jvoss2@hboi.fau.edu
5. **TA contact information (if applicable)**
N/A
6. **Course description**
Examines emerging molecular technologies and their application in the marine sciences through a combination of lecture, discussion, and debates.
7. **Course objectives/student learning outcomes**
Students will develop an in-depth understanding of 1) the molecular mechanisms that underlie structure and function in marine communities; 2) advanced molecular techniques for investigating ecological processes; 3) experimental design and interpretation using molecular tools; 4) potential roles for molecular ecology in management strategies and conservation biology.
8. **Course evaluation method**
Two exams, a midterm and a final, will each account for 25% of the student's cumulative performance. Leadership of and participation in discussions will account for 20% of the student's cumulative performance. Quizzes will account for 10% of the student's cumulative performance. An independent research paper will account for 10% of the student's cumulative performance. A presentation related to the research paper will account for 10% of the student's cumulative performance. The overall grade in the course is derived from the cumulative performance according to the following table.

9. Course grading scale (optional)

Cumulative Performance	Grade
>93%	A
>90% - 93%	A-
>87% - 90%	B+
>83% - 87%	B
>80% - 83%	B-
>75% - 80%	C+
>65% - 75%	C
>60% - 65%	C-
>57% - 60%	D+
>53% - 57%	D
>50% - 53%	D-
<50%	F

10. Policy on makeup tests, late work, and incompletes

If a student cannot attend an exam or hand in a homework project on time due to circumstances beyond their control then the instructor may assign appropriate make-up work. Students will not be penalized for absences due to participation in University-approved activities, including athletic or scholastics teams, musical and theatrical performances, and debate activities. These students will be allowed to make up missed work without any reduction in the student's final course grade. Reasonable accommodation will also be made for students participating in a religious observance. Also, note that grades of Incomplete ("I") are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances. A grade of "I" will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's University Catalog. The student must show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

11. Special course requirements (if applicable)

N/A

12. Classroom etiquette policy (if applicable)

University policy on the use of electronic devices states: "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."

13. 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.

14. 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/regulations/chapter4/4.001>
Honor_Code.pdf.

15. Required texts/readings

Freeland, J.R. 2011. *Molecular Ecology*, 2nd Edition. Wiley-Blackwell. 464 pp. ISBN-13: 9780470748336

16. Supplementary/recommended readings (optional)

Landry, C.R., and N. Aubin-Horth. 2013. *Ecological Genomics*. Springer. 388 pp. ISBN-13: TBA

Selected articles to be provided from the journals *Marine Ecology Progress Series*, *Journal of Molecular Biology*, *Marine Genomics*, etc.

17. Course topical outline

Topic	Assigned Readings
1. Introduction to molecular ecology and biology	Freeland 1-29
2. Species concepts, mutation, speciation	Freeland 63-77
3. Molecular markers	Freeland 31-60
4. Next generation sequencing platforms	Quail et al. (pdf)
5. Next generation sequencing applications	Williams et al. (pdf)
6. Bioinformatics and data architecture	Altschul et al. (pdf)
7. Genetics within populations	Freeland 77-106
8. Phylogenetics	Freeland 155-173
9. Phylogeography	Freeland 109-153
10. Functional genomics and gene expression	Beebee et al. (pdf)
11. Assessing marine biodiversity at multiple scales	Singer et al. (pdf)
12. Barcoding: express checkout?	Schander (2005)
13. Marine conservation genetics	Freeland 247-277
14. Marine wildlife forensics	Shivji (pdf)
15. Multi-domain techniques in coral ecology	Rohwer (pdf)
16. The future of marine molecular science	Freeland 301-306