## Graduate Programs—NEW COURSE PROPOSAL

**Department:** Biological Sciences  
**College:** College of Science  
**Effective Date:**  
(First term course will be offered)  
**Fall 2014**

### Recommended Course Identification:
- **Prefix:** BSC  
- **Course Number:** _6346_  
- **Lab Code (L or C)**:  
- **Complete Course Title:** Introduction to Marine Biotechnology

### Credits: 3

**Textbook Information:** There is no required textbook. Reading assignments related to the topics under discussion will be drawn from the current scientific literature and will form the basis of homework assignments. A listing of these assignments will be provided by each Instructor.

### Grading (Select only one grading option):
- Regular
- X
- Satisfactory/Unsatisfactory

### Course Description:
An introduction to the principles and practices of Marine Biotechnology & its commercial applications: (1) the cultivation and genetic manipulation of marine microorganisms, invertebrates and vertebrates; (2) disease impacts in aquaculture systems; (3) the discovery and production of commercially relevant products; and (4) policy related to the commercial development of marine resources.

### 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. Peter McCarthy  
pmccart5@liboi.fau.edu  
(772) 242-2632  

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

### Approved by:
- **Department Chair:**  
- **College Curriculum Chair:**  
- **College Dean:**  
- **UGPC Chair:**  
- **Graduate College Dean:**  
- **UFS President:**  
- **Provost:**  

**Date:**  
3/10/14  
02/12/14  
3/13/14  
3/14/14  
3/24/14

1. **Syllabus** must be attached; see guidelines for requirements:  
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)

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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.

**FAUnewurseGrad—Revised September 2013**
Course Syllabus for Introduction to Marine Biotechnology

1. Course title/number, number of credit hours

   BSC 6346: Introduction to Marine Biotechnology, 3 credit hours

2. Course prerequisites

   a. Graduate Status

3. Course logistics

   a. Fall 2014
   b. Notation if online course – N/A
   c. Class location and time (if classroom-based course) – To be determined

4. Instructor contact information

   Lead Instructor:
   Dr. Peter McCarthy (772-242-2632) pmccart5@hboi.fau.edu,
   FAU Marine Science Building Room #147

   Dr. Amy Wright (772-242-2459) awrigh33@hboi.fau.edu
   Dr Esther Guzman (772-242-2452) eguzman9@hboi.fau.edu
   Dr. Susan Laramore (772-242-2525) slaramo1@hboi.fau.edu
   Dr. John Scarpa (772-242-2404) jscarpa1@hboi.fau.edu
   Dr. Paul Wills (772-242-2454) pwills2@hboi.fau.edu
   Dr. Shirley Pomponi (772-242-2449) spomponi@hboi.fau.edu

   Instructor Office Hours:
   McCarthy: Tues 9-10am, Thurs 9-10am and by appointment
   All other instructors by appointment

5. TA contact information (if applicable)

   N/A

6. Course description

   An introduction to the principles and practices of Marine Biotechnology and its commercial
   applications. The course focuses on: (1) the cultivation and genetic manipulation of marine
   microorganisms, invertebrates and vertebrates; (2) disease impacts in aquaculture systems; (3)
   the discovery and production of commercially relevant products; and (4) policy related to the
   commercial development of marine resources.

7. Course objectives/student learning outcomes

   This course aims to introduce students to the concepts of Marine Biotechnology
Students will understand the commercialization of marine products, the issues involved in identification of potential products, the techniques used in commercial production and regulatory control.

8. Course evaluation method

There will be graded homework assignments accounting for 20% of the student's cumulative performance, a midterm exam, accounting for 40% of the student's cumulative performance, and a final exam that accounts for 40% of the cumulative performance. The overall grade in the course is derived from the cumulative performance according to the following table.

9. Course grading scale (optional)

<table>
<thead>
<tr>
<th>Cumulative Performance</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;94%</td>
<td>A</td>
</tr>
<tr>
<td>&gt;90% - 94%</td>
<td>A-</td>
</tr>
<tr>
<td>&gt;87% - 90%</td>
<td>B+</td>
</tr>
<tr>
<td>&gt;83% - 87%</td>
<td>B</td>
</tr>
<tr>
<td>&gt;80% - 83%</td>
<td>B-</td>
</tr>
<tr>
<td>&gt;75% - 80%</td>
<td>C+</td>
</tr>
<tr>
<td>&gt;65% - 75%</td>
<td>C</td>
</tr>
<tr>
<td>&gt;60% - 65%</td>
<td>C-</td>
</tr>
<tr>
<td>&gt;57% - 60%</td>
<td>D+</td>
</tr>
<tr>
<td>&gt;53% - 57%</td>
<td>D</td>
</tr>
<tr>
<td>&gt;50% - 53%</td>
<td>D-</td>
</tr>
<tr>
<td>&lt;50%</td>
<td>F</td>
</tr>
</tbody>
</table>

10. Attendance Policy: Attendance for exams and lectures is required. If a student cannot attend an exam 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.

11. Incomplete Grade: A grade of Incomplete ("I") is 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. As per university policy, an incomplete grade will only be given to a student who fulfills all of the following criteria:

a. misses multiple exams or the final examination due to a legitimately documented emergency as defined by the FAU Academic Policies and Regulations: http://www.fau.edu/academic/registrar/09-10_catalog/academics.html

b. has a grade of C or better

c. submits evidence of the emergency and signs an incomplete agreement.
12. Special course requirements (if applicable): N/A

13. Classroom Etiquette Policy: 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." You may be asked to leave the class session for noncompliance.

14. Student Honor Policy: 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

Cheating is a serious offense. If you are caught cheating, you will receive an F in the course. In addition, you will be referred to the Dean of Student Services and charged with an academic crime. Test procedures and rules will be stated at the beginning of each exam.

15. Disabilities Policy: 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) and follow all OSD procedures.

16. Required texts/ readings

There is no required textbook.

Reading assignments related to the topics under discussion will be drawn from the current scientific literature and will form the basis of homework assignments. A listing of these assignments will be provided by each Instructor. Examples follow:


17. Supplementary/recommended readings (optional)

18. Course topical outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Biotechnology; The Tools of Biotechnology</td>
<td>Reading Assignment: Freitas et al (2012); Murray et al (2013)</td>
</tr>
<tr>
<td>4</td>
<td>Marine Invertebrates: Genetic Manipulation and Cell Culture</td>
<td>Reading Assignment: Grasela et al</td>
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<tr>
<td>5</td>
<td>Marine Fin Fish: Production and Genetic Manipulation</td>
<td>Reading Assignment: McAndrew and Napier (2011); Piferrer et al (2009); Gjedrem et al (2012)</td>
</tr>
<tr>
<td>7</td>
<td>Exam I</td>
<td></td>
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<tr>
<td>8</td>
<td>Secondary Metabolism in Marine Microorganisms; The Sponge Microbiome</td>
<td>Reading Assignment: Hentschel et al</td>
</tr>
<tr>
<td>9</td>
<td>Secondary Metabolism in Marine Invertebrates</td>
<td>Reading Assignment: Leal et al (2012)</td>
</tr>
<tr>
<td>10</td>
<td>Molecular Techniques in Drug Discovery</td>
<td>Reading Assignment: Lasken et al (2012)</td>
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<tr>
<td>11</td>
<td>Natural Products Discovery: anticancer agents; anti-infective agents</td>
<td>Reading Assignment: Waters et al (2010)</td>
</tr>
<tr>
<td>12</td>
<td>Commercial Development of Natural Products</td>
<td>Reading Assignment: Molinski et al</td>
</tr>
<tr>
<td>13</td>
<td>Biosynthesis: Genes to Drugs</td>
<td>Reading Assignment: Xu et al (2012); Wilson et al (2013)</td>
</tr>
<tr>
<td>14</td>
<td>Marine Organisms in White Biotechnology and Diagnostics</td>
<td>Reading Assignment: Seo et al (2013)</td>
</tr>
<tr>
<td>15</td>
<td>Public Policy: Genetically Modified Organisms; Natural Resources</td>
<td>Reading Assignment: Ritchie et al (2013)</td>
</tr>
<tr>
<td>16</td>
<td>Exam II</td>
<td></td>
</tr>
</tbody>
</table>