

# **FYSE 108: Biomimicry, nature as mentor**

**MWF 1:30-2:20 PM Harbor Walk West Room 217**

## **Course Syllabus**

**Instructor Deb Bidwell**

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**Fall 2016**

## **Course Description:**

What will it take for 7.3 billion humans to live sustainably? Although we are part of nature, we don't seem to play by the same rules. What can natural systems teach humans about fitting in on earth? Using an innovative, interdisciplinary, integrative approach, biomimicry looks to nature as genius, mentor, and guide, seeking sustainable solutions that (re)align humans with earth's natural processes. Life on earth, comprised of more than 30 million species with over 3.8 billion years of experience, has already developed successful, efficient, sustainable solutions to the same problems humans face. In this rigorous, hands-on First Year Seminar we'll explore how biomimicry can tap into nature's genius, and prepare students to take on leadership roles in the sustainability movement.

### *Pre-requisites*

- None. The Peer Synthesis Seminar with Morgan Larimer and Zachary Dellacqua is a co-requisite, mandatory for completion of the First Year Experience requirement. It is held Wednesdays at 8 AM in Bell 316.

## **Instructional Objectives:**

- This first year seminar provides a background for understanding biomimicry and its role in promoting sustainability. Students should develop a foundational understanding of life's biological principles, identify and describe the three essential elements of biomimicry, distinguish biomimicry from other biology related design processes, use the Grinnell format for field notes, tap biomimicry thinking to brainstorm and evaluate sustainable solutions to human design challenges, and communicate biomimicry's potential to the campus community. See addendum for further details.

## **FYE Learning Outcomes:**

- Students will be able to identify and use the appropriate academic resources and student support services at College of Charleston. These would include the Addlestone library, information technology, the Center for Student Learning, the Career Center, and other appropriate academic resources, student support services, and cultural resources. This will be assessed with an end of semester

exam in the First Year Synthesis Seminar course.

- Students will be able to use appropriate tools and search strategies for identifying particular types of information specific to the discipline; Evaluate the relevance, quality, and appropriateness of different sources of information; Recognize and classify the information contained within a bibliographic citation; Access and use information ethically and legally. This will be assessed with a source identification and source relevance activity that will be part of the FYE embedded librarian session.
- Students will be able use appropriate critical thinking skills and problem-solving techniques in appropriate disciplinary contexts and make connections across disciplines and/or relevant experiences.

## Contact/Communication

### *Private Student-To-Instructor Contact*

- Students should contact me about issues that are specific to the student **by email at [bidwelld@cofc.edu](mailto:bidwelld@cofc.edu)**
- My response turn around time with emails will normally be **within 24 hours on weekdays and within 48 hours on weekends.**

### *General Student-To-Instructor and Student-To-Student Contact*

- Students should contact the Instructor and other students on issues that are not student-specific and may benefit or apply to the entire class using the **OAKS Discussion Board Lounge open 24 hours a day, 7 days a week.**
- My response turnaround time on the discussion board lounge will normally be **within 24 hours weekdays and within 48 hours on weekends.**

### *Office Hours*

- Online office hours with instant feedback in the **OAKS Chatroom On Wednesdays from 9-10 PM Eastern Standard Time.**
- In person office hours (group drop-in) **HWW 311 Wednesdays 2:30 - 4:30 PM**
- Individual appointments may be **arranged by email.**

### *Course Communication and Community Building*

- **OAKS** will be utilized for **content, news, updates, and online office hours.**  
*New to Oaks?* tutorials here: <http://blogs.cofc.edu/oaks/students/getting-started/>
- **Email** will be used to communicate important or sudden changes in course information.

- We will **all work together to build our classroom and online learning community**. I will play a facilitating role in helping you get to know, work with, trust and collaborate with the other members of our class. Each member of the class must be willing to participate in a dynamic and engaging learning group that is inclusive. Your participation, willingness to contribute, and your initiative are paramount to having a successful and enjoyable learning experience. We **aim to develop a spirit of camaraderie and team learning that will unite us** as a community of learners.
- This semester we will be doing some group discussion work online using discussion boards through OAKS. **As your instructor and facilitator I'll require you to make OAKS discussion posts about our course readings, as well as expecting you to thoughtfully reply to several of your peers' comments**. You can find a **rubric** about the expectations for quantity and quality of online discussion comments on OAKS.
- **Netiquette**: In our course discussions, we will be using complete sentences and proper grammar and will **not be using abbreviations or slang the way we might while texting**. Because it is difficult to interpret tone from only written text, and our online communication in the OAKS discussion boards will lack facial expression, body language, hand gestures, and other social clues, it is especially important that we all take special care to be sensitive to possible tone misinterpretation which can lead to inadvertently hurt feelings that result in exclusion rather than inclusion. **We will all need to make sure that we are respectful, and professional in our posts**. For example, when we are challenging each other's ideas, it is vital that we do not allow arguments to become personal. We can disagree about the subject matter in a respectful, intellectual way that still allows for us to work well, and collaborate together.

## Expectations

- Students must earn **100% on OAKS syllabus quiz** to access course materials.
- Students should plan to **log into Oaks at least 3 times per week**.
- Students should dedicate **6+ hours per week** outside of class to be successful.
- This class is **student-driven**. Motivation must come from the student.
- Our class should be **interactive and engaging**.
- Students are expected to **contribute** to our **learning community**.
- **There are weekly obligations**: field notes, discussion board posts, or projects.
- **Paired and group work is expected**.
- **Ask for help early and often**. Don't wait until you feel overwhelmed.

## Required Course Materials

- **Computer/technology** with access to **internet**
- **Software/Apps:** (OAKS, PowerPoint, digital camera)
- **Field note supplies:**  
<https://lms.cofc.edu/d2l/le/content/152258/viewContent/1621880/View>

## Attendance and Participation

- Student participation includes group work in class and posts to the **online group discussion board for each module's reading. Please see netiquette rules above and rubric regarding posting guidelines and expectations.**
- Missing more than 4 peer synthesis seminars (excused and unexcused) will result in non fulfillment of the FYE requirement and will have to take another FYE course.
- Missing more than 5 regular class sessions with unexcused absences will result in a proportional grade reduction beginning at 5%.

## Accommodation

**Center for Disability Services** (<http://disabilityservices.cofc.edu/for-faculty/faqs.php>)

- Any student eligible for and needing accommodations because of a disability is requested to speak with the professor during the first two weeks of class or as soon as the student has been approved for services so that reasonable accommodations can be arranged. This College abides by section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. If you have a documented disability that may have some impact on your work in this class and for which you may require accommodations, please see an administrator at the Center of Disability Services/SNAP, 843.953.1431 so that such accommodation may be arranged.
- Athletes, International, ESL, and all students with life circumstances that may warrant accommodations are encouraged to **discuss any concerns with the instructor** in a timely manner. I am fluent in Spanish. I understand that we all have way more important things going on in our lives than this biology class. I aim to be friendly, approachable, and understanding. I will hold you to high standards.

## Honor Code and Academic Integrity:

Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student's actions are related more to a misunderstanding will be handled by the instructor. A written intervention designed to

help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student's file. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student's transcript for two years after which the student may petition for the XX to be expunged. The F is permanent. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration--working together without permission-- is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others' exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor.

<http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php>

**Center for Student Learning:** I encourage you to utilize the Center for Student Learning's (CSL) academic support services for assistance in study strategies, speaking & writing strategies, and course content. They offer tutoring, Supplemental Instruction, study strategy appointments, and workshops. Students of all abilities have become more successful using these programs throughout their academic career and the services are available to you at no additional cost. For more information regarding these services please visit the CSL website at <http://csl.cofc.edu/> or call (843)953-5635.

## Assessment

- Field notes will be utilized to tie class room lecture material, assigned readings, and nature observations together. Weekly assignments for first two months of class.
- Written discussion posts (3) will be made through the OAKS discussion board in small groups, critiquing articles/videos, utilizing supporting references, providing peer feedback and stimulating debate/discussion.
- Paired/group hands-on projects in the final month of the course focus on practicing and communicating biomimicry. Projects will include written, oral, and visual components.
- Participation in Peer Synthesis Seminar and class activities is a graded component of the course.
- There are no formal exams or quizzes.

## Grades calculated as follows:

<u>Component</u>	<u>Value (% of final course grade)</u>
<b>Class Participation/Preparedness</b>	<b>10</b>
<b>Peer Synthesis Seminar Preparedness/Participation</b>	<b>10</b>
<b>Field Notes (9)</b>	<b>30</b>
<b>Biomimicry Thinking Project</b>	<b>20</b>
<b>Communicating BMY Project</b>	<b>15</b>
<b>Written Discussions (3)</b>	<b>15</b>
<b>Total:</b>	<b>100%</b>

Tentative Schedule for FYSE 108 MWF class:

<b>Week:</b>	<b>Class topic:</b>	<b>Written discussion Post or Field notes topic:</b>	<b>Due for grading:</b>
Aug 24-26	Introduction. Syllabus. What is biomimicry?		Must score 100% on <b>syllabus quiz</b> (OAKS online) for access to course materials on OAKS.
Aug 29-Sept 2	(Re)connect, intro to field notes (iSites)	Field notes 1: Mitakuye Oyasin, sound map, senses	Upload <b>field notes 1</b> to field notes forum (in discussion tab) OAKS by 11:59 PM 9/4
Sept 5-9 <b>yes, we have class on Labor Day</b>	Emulate, bio-what?, Ethos	Field notes 2: multifunctional artifact  Discussion 1: Rethinking wilderness/the trouble with nature therapy	Upload <b>field notes 2</b> to field notes forum by 11:59 PM 9/11  Post to <b>written discussion</b> forum regarding Rethinking wilderness/the trouble with nature therapy by 11:59 PM 9/8 and reply to two peers by 11:59 PM 9/11
Sept 12-16	The meaning of life: biology taught functionally	Field notes 3: organism of interest	Upload <b>field notes 3</b> to class discussion page
Sept 19-23	Basic patterns in biology	Field notes 4: color lens	Upload <b>field notes 4</b> to class discussion page
Sept 26-30	Basic patterns in biology cont...	Field notes 5: scavenger hunt  Discussion 2: Cradle to Cradle and the Story of Stuff	Upload <b>field notes 5</b> to class discussion page  Post to <b>written discussion</b> forum regarding Cradle to Cradle and the Story of Stuff by 11:59 PM 9/29 and reply to two peers by 11:59 PM 10/2
Oct 3-7	Biomimicry thinking - doing biomimicry	Field notes 6: life along a tree	Upload <b>field notes 6</b> to class discussion page
Oct 10-14	Biomimicry thinking - scoping	Field notes 7: operating conditions	Upload <b>field notes 7</b> to class discussion page
Oct 17-21	Biomimicry thinking - discovering	Field notes 8: optimized  Discussion 3: Nature is Speaking	Upload <b>field notes 8</b> to class discussion page  Post to <b>written discussion</b> forum regarding Nature is Speaking by 11:59 PM 10/20 and reply to two peers by 11:59 PM 10/23
Oct 24-28 (withdraw deadline is 10/27)	Biomimicry thinking - creating	Field notes 9: Murray's law/golden ratio	Upload <b>field notes 9</b> to class discussion page
Oct 31-Nov 4	Biomimicry thinking - evaluating		
Nov 9-11 <b>No class Monday, fall break. Don't forget to vote!</b>	Class time for research, writing, and preparations for presentations		
Nov 14-18	Presentations of biomimicry thinking project		Class <b>oral presentations</b> MWF, final <b>written project summary</b> due Friday in class

Nov 21 <b>no class Wed. and Fri. Thanksgiving</b>	Communicating biomimicry - final project discussion/ teams		
Nov 28-Dec 2	Biomimicry – spreading the meme		
Dec 5	Last day of class, synthesis, evaluations, wrap up	<b>(LAST DAY</b>	<b>OF CLASS IS MON. 12/5)</b>
Dec 9			In lieu of final exam, <b>final project</b> is due by 5PM on December 9th