

# FYSE 108: Biomimicry, nature as mentor

MWF 2:00-2:50 PM RHSC 273

## Course Syllabus

Instructor Deb Bidwell

RHSC 229 [bidwelld@cofc.edu](mailto:bidwelld@cofc.edu) 843-953-7107

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## 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 as other organisms. 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 Makenna Andersen is a co-requisite, mandatory for completion of the First Year Experience requirement. It is held Fridays at 9AM in Bell south 400.

## Student Learning Outcomes:

**By the completion of this course, a student will be able to...**

- Discuss biomimicry and its role in promoting sustainability.
- Identify life's fundamental biological principles.
- Identify and describe the three essential elements of biomimicry.
- Distinguish biomimicry from other biology-related design processes.
- Demonstrate the i-Sites (Grinnell-based) format for field notes.
- Use biomimicry thinking to develop and evaluate sustainable solutions to human design challenges.
- Communicate biomimicry's potential to the greater campus community.

## Sustainability Literacy (QEP) Learning Outcomes:

**By the completion of this sustainability related course, a student will be able to...**

- Identify elements of sustainability and the relationships between them (social, economic, and environmental).
- Identify key ways to be more sustainable in personal life and on campus.
- Identify policies and practices that have led to unsustainability.
- Synthesize knowledge from two or more systems to address a sustainability problem.
- Design a solution to a given sustainability problem.

## FYE Learning Outcomes:

**By the completion of this First-Year Experience, a student 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.
- 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
- Use appropriate critical thinking skills and problem-solving techniques in appropriate disciplinary contexts
- 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 “Hallway Conversations” open 24 hours a day, 7 days a week.
- My response turnaround time on the discussion “hallway conversations” will normally be **within 24 hours weekdays and within 48 hours on weekends.**

### *Office Hours*

- In person office hours (group drop-in) **RHSC 229 Mondays 3-5 PM, Thursdays 10-12 AM. Individual meetings by appointment** may be arranged by email.
- Online office hours/tutoring may be arranged by email.

### *Course Communication and Community Building*

- **OAKS** will be utilized for **content, news, updates.**  
*New to Oaks?* tutorials here: <http://blogs.cofc.edu/oaks/students/getting-started/>
- **Email and/or News updates on OAKS** will be used to communicate important or sudden changes in course information.
- We will **all work together to build our 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.**
- This semester we will be doing some group discussion work online using discussion boards through OAKS. You can find a rubric about the expectations for quantity and quality of online discussion comments on OAKS.
- **Netiquette:** In our written 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 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 take care to be sensitive to possible misinterpretation and 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**.
- **Office hours** are for getting to know each other. You are strongly encouraged to drop by.
- 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**.
- **Paired and group work is expected**.
- **Attendance 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**

## Attendance and Participation

- Student participation includes group work in class and written discussion posts to the online group discussion board. 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-fulfilment of the FYE requirement and student will have to take another FYE course.
- Missing more than 4 regular class sessions with unexcused absences will result in a proportional grade reduction beginning at 5%.
- Repeated tardiness more than 5 times to regular class sessions will result in a proportional grade reduction beginning at 2.5%.
- Refusal to attend office hours at least once results in a 1% reduction of grade.

## 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 naturalist notes will be utilized to tie class room lecture material, assigned readings, human design, and nature observations together. Peer sharing/feedback is required.
- 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.
- Hands-on projects focus on practicing and communicating biomimicry. Projects will include written, oral, and visual components.
- Successful participation in Peer Synthesis Seminar is a graded component of the course.

## Grades calculated as follows:

<u>Component</u>	<u>Value (% of final course grade)</u>
<b>Class Participation, Preparedness, Attendance</b>	<b>10</b>
<b>Peer Synthesis Seminar Preparedness/Participation</b>	<b>10</b>
<b>Nature Journal Field Note Assignments (5)</b>	<b>25</b>
<b>Biomimicry Thinking Project</b>	<b>25</b>
<b>Communicating BMY Project</b>	<b>15</b>
<b>Written Discussion Assignments (3)</b>	<b>15</b>
<b>Total:</b>	<b>100%</b>

Tentative Schedule for Bidwell FYSE 108 MWF class \*this schedule may be modified as the course progresses.

Week	Lecture topic	Assigned material (on OAKS)	Due for grading
Aug 22-24	Introduction. What is biomimicry? What is nature?	Read:Primer on biomimicry by Janine Benyus	Must score 100% on syllabus quiz (OAKS online) for access to course materials on OAKS.  Sign excursion waiver
Aug 27- 31	(Re)connect, Kellert's nine ways of experiencing nature	Read: Excerpts from Louv's Last Child in the Woods, McKibben's The End of Nature, Cronon article: The Trouble with Wilderness	Nature Journal #1 upload by Sunday 9/2, share in class Monday 9/3
Sept 3-7 <b>yes, we have class on Labor Day</b>	Ethos	Primer on Ethos, BMY Handbook  History of a cup of coffee essay, excerpt and interview re: David Owen's Conundrum	Nature journal #2 upload by Sunday 9/9, share in class Monday 9/10  Discussion Board Post #1 - Trouble with wilderness Post thread to OAKS by W 9/5 & reply to 2 peer posts by F 9/7
Sept 10-14	Emulate	Primer on Emulate, BMY Handbook	Nature journal #3 upload by Sunday 9/16, share in class Monday 9/17  Discussion Board Post #2 - Conundrum Post thread to OAKS by W 9/12 & reply to 2 peer posts by F 9/14
Sept 17-21	Life's Principles	Class "design lessons" handouts	Nature journal #4 upload by Sunday 9/23, share in class Monday 9/24
Sept 24-28	Life's Principles continued	Class LP handouts, and Deep Look videos	Nature journal #5 upload by Sunday 9/30, share in class Monday 10/1
Oct 1-5	Biomimicry Thinking - Scoping	The function bridge, Scoping worksheet	Team contract by 10/5
Oct 8-12	Biomimicry Thinking - Discovering	Biomimicry taxonomy	Team scoping brief by 10/12
Oct 15-19	Biomimicry Thinking - Discovery continued	Biomimicry thinking: steps	Team list of potential mentors by 10/19
Oct 22-26	Biomimicry Thinking - Discovery continued	Abstracted design principles, NTS template	Nature Technology Summaries (2) each by 10/26
Oct 29-Nov 2	Biomimicry Thinking - Creating, brainstorming	Design charette	Team brainstorm notes by 11/2

Nov 5-9 (vote!) <b>No Class Monday, fall break</b>	Biomimicry Thinking – Creating continued	LP checklist	Life’s Principles evaluation checklist by 11/9
Nov 12-16	Biomimicry Thinking - evaluating	Class handouts: evaluations	<b>Student Presentations</b> Peer, team, and self-evaluations by 11/26
Nov 19-23 <b>Class meets online on Monday. No classes Wed. and Fri. for Thanksgiving</b>		Changing human mindsets articles and videos	Optional extra credit nature journal this week. Please think about your final project topic.  Enjoy Thanksgiving
Nov 26-30	Spreading the meme	Changing human mindsets articles and videos (cont.)  Nature is speaking videos	Finalize final project topic– approval via email by 11/30.  Discussion # 3 – Changing human mindsets Post thread to OAKS by W 11/28 & reply to 2 peer posts by F 11/30
Dec 3 <b>Last day of class</b>	Wrap it up, course evaluations		
Dec 12			<b>Final projects, in lieu of final exam, due by Wednesday December 12<sup>th</sup> at 3 PM</b>