



## Biomimicry: Innovation Inspired by Nature COURSE SYLLABUS

- INSTRUCTOR:** Biomimicry Institute: Director of University Education  
Cindy Gilbert: 728-4134 x202; [cindy@biomimicryinstitute.org](mailto:cindy@biomimicryinstitute.org)
- CLASS MEETING:** Tuesday evening (6:10-9:00pm); DHC 118
- TEXTBOOK:** Benyus, Janine. 1997. Biomimicry: Innovation Inspired by Nature. This text is recommended but not required. There will also be required readings from on-line and print sources made available to you throughout the course.

### **Background:**

"Biomimicry" (from *bios*, meaning life, and *mimesis*, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. Natural systems and organisms provide stunning examples of effective communication, resource production and storage, and energy-efficient design.

The core idea of biomimicry is that nature, imaginative by necessity, has already solved many of the problems we are grappling with. Animals, plants and microbes are the consummate engineers; they have found what works, what is appropriate, and most importantly, what is sustainable.

*The Biomimicry Institute is a not-for-profit organization whose mission is to naturalize biomimicry in the culture by promoting the transfer of ideas, designs and strategies from biology to sustainable human systems design.*

### **Course overview:**

This class will explore past, present and future examples of biomimetic solutions to human problems. We will learn how experts in the field of biomimicry use nature's organisms and ecosystems as model, measure and mentor to discover engineering, architectural, business operations/management, and product development solutions.

### **Course goals:**

To introduce the interdisciplinary tool of biomimicry and provide real-world experiences applying this tool through individual and team work. By the end of the course, students will: 1) have a solid understanding of biomimicry and biomimetic examples, 2) be able to explain what biomimicry is to a variety of audiences in a clear and concise manner, 3) be able to effectively apply the tool of biomimicry to arrive at sustainable design solutions.

### Course objectives:

- 1) Develop a clear understanding of biomimicry and how it may be used to find sustainable solutions to human problems;
- 2) Strengthen observation skills through deep pattern recognition;
- 3) Hone essential communication skills –verbal, written, visual and science translation- through individual and team exercises;
- 4) Develop critical thinking and problem solving skills;
- 5) Foster engagement in scientific discourse with audiences from non-scientific disciplines through real-world experiences.

### Grading:

Grades will be based upon the following components:

- 1) Attendance & class participation (15%),
- 2) Homework assignments & class preparation (30%),
- 3) Journal (15%),
- 4) Group assignment & final presentation (40%)

Note: attendance at all classes is expected; frequent unexplained absences diminish class discussion and will result in a lower final grade.

Student developed and presented materials will be scored as follows:  
A – Excellent quality; B – Above Average Quality; C – Average Quality; D – Below Average Quality; F – No effort made.

You will not be penalized for personal beliefs expressed in this class. However, tactful and respectful interaction with fellow students, instructors and guest lecturers is mandatory.

### What is expected of students:

Engaged participation in class discussion; students will be expected to arrive at class prepared to contribute in a meaningful way. Depending on the topic, students may have the responsibility for organizing and leading sessions on selected topics. Students will be asked to communicate their ideas verbally, written and visually. Students will work independently as well as in pairs, small teams and groups. All students are expected to be open-minded and respectful of other people's ideas and views.

### Academic misconduct and the Student Conduct Code:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. **All students need to be familiar with the Student Conduct Code.**