The discovery between disciplines, material and design exploration. Creating nature-inspired solutions for research and entrepreneurship.

Learning from the natural world, we encourage all disciplines to take advantage of this new certificate. Engaging real world challenges, the courses develop flexible thinking, immersive learning, abstract explorations, and problem solving.

REQUIRED
- Biomimicry Foundations | 3 credits
- Technology-Based Startups | 3 credits
- Biomimicry Design Challenge | 3 credits

ELECTIVES (Choose two, take in any order)
- Comparative Biomechanics | 3 credits
- Biodesign | 3 credits
- Physics of Living Systems | 3 credits
Biomimicry: innovation through emulation of biological forms, processes, patterns and systems.

The Undergraduate Certificate in Biomimicry is designed to give students training and experience in the theory, methods, and practice of seeking inspiration from living systems to solve technical challenges. Undergrads seeking a certificate will work with peers and faculty from departments including biology, art, engineering, and business to develop a skillset enabling problem solving in a variety of contexts where innovation and sustainability are desired outcomes.

We encourage students majoring in art, science, engineering, business, and allied disciplines to take advantage of this new certificate.

These are cross-disciplinary classes that encourage flexible thinking, immersive learning, real world challenges, abstract concepts, problem solving and learning from the natural world.

15 CREDITS

REQUIRED

- Biomimicry Foundations | 3 credits
- Technology-Based Startups | 3 credits
- Biomimicry Design Challenge | 3 credits

ELECTIVES (Choose two, take in any order)

- Comparative Biomechanics | 3 credits
- Biodesign | 3 credits
- Physics of Living Systems | 3 credits

3100: 238 Biomimicry Foundations
Prerequisites: None
Dr. Peter Niewiarowski
Biomimicry is the process of learning about and from nature in order to spark new ideas like Velcro, airplanes, and swarm computing, that offer a powerful paradigm for solving all kinds of problems.

7100: 316 Biodesign
Sophomore status or permission of instructor
Dr. Petra Gruber
Biodesign is an entry level design course in biomimicry using nature as a model for creating innovative design solutions.

3100: 475/575 Comparative Biomechanics
Prerequisites: None
Dr. Henry Astley
Learn about how animals run, jump, swim, fly, burrow and eat by linking physics and engineering with biology.

9871:333 Physics of Living Systems
Prerequisites: None
Dr. Hunter King
Learn how biological systems use structure and material to derive rich optical and mechanical function.

4600:481 Technology-Based Startups
Prerequisites: None
Dr. Gopal Nadkarni
Innovate and work in interdisciplinary groups to find technology startup opportunities that can be solved using known biomimetic concepts.

CAPSTONE 3100:318 Biomimicry Design Challenge
Prerequisites: None
Dr. Petra Gruber
Working across disciplines and using nature as a model for creating an innovative solution that targets a specific design problem.

Learn more at uakron.edu/bric/undergrad-certificate or contact Dr. Peter Niewiarowski at phn@uakron.edu