

# RISD Liberal Arts WINTERSESSION

## SCIENCE & SCIENCE STUDIES



### SCIENCE ELECTIVES SCI (LAEL)

#### ART OF COMMUNICATING & VISUALIZING SCIENCE

Lucy Spelman SCI, Nick Jainschigg ILL  
6 credits

Register 1st for either ILL-3912 or IDISC-3912, registration for SCI-W912 is automatic

This seminar+studio 6 course is an opportunity for undergraduate and graduate artists, designers, and science communicators to learn new ways to incorporate science content into their creative process. The topic is human impacts on biodiversity. Skills gained include idea generation, listening and note taking, thumbnail sketching, and practice analyzing and interpreting scientific information in order to both understand and present it visually.

#### BOTANY IN THE KITCHEN

Hope Leeson  
3 credits, SCI-W002

While we eat foods from over 60 plant families, we rarely consider how, from an evolutionary standpoint, those plants are related, or why we eat one species of the family (such as the potato), but not another (the deadly nightshade). Organized around our culinary uses of plants, this course explores the evolutionary relationships between foods, and discover what links them together. The seminar will culminate with a botanical feast, featuring unique dishes created from taxonomically related groups of plants.

7--3--A789--7  
.577

#### AUSTRALIA: WITNESS TREE PROJECT - TRAVEL COURSE

Dan Cavicchi  
3 credits  
Register for both HPSS-W732 and FD-1732

Witness trees are long-standing trees that have "witnessed" key events, trends and people. In this joint history seminar and furniture studio course, students interpret the history the tree(s) witnessed and make relevant objects from the trees wood. In addition to classroom study, the Project variously involves field trips, guest lectures, exhibition of student' objects and other events that highlight the significance of material culture, landscape and design in learning about American history.

#### MIND, BRAIN AND BEHAVIOR

Thomas McKeef  
3 credits  
SCI-W088

The field of cognitive neuroscience aims to link the mind, the brain and behavior by trying to understand the biological nature of human thought and behavior. Questions considered during this course: How is the brain built and how well can it rewire itself? How can we measure the living brain? What functions do various parts of the brain support? The focus is on the neural underpinnings of perception, attention, memory, language, executive function, emotion, social cognition, and decision-making.

7--3--A 4.A  
,18-63,8.:A-3-6.:A

Bonnie Epstein  
3 credits  
SCI-W0389

This course explores how humans use energy and how our needs can be met using "green" methods. Topics covered include the energy of the past (wood, coal, water, animal etc.), alternatives to this energy (nuclear, fuel cells, biofuel etc.) as well as the renewing of some old techniques (wind, water, solar etc.) The final project is to develop a design solution for an energy problem. Two field trips will be scheduled to view alternative energy in action. No prior science background is required.

458.-7A,3-A2,1.3.A  
.414.6,27A

Donald Thornton  
3 credits, SCI-1014

The focus of this course is to learn how to make holograms with lasers, and understand the physics that make them work. This non-mathematical presentation of optics leads us to an appreciation of the logic and beauty behind the behavior of light. Starting with the fundamental properties of light, we pass through the geometric optics of reflection and refraction, and the wave optics of interference and diffraction to the clarity of particle waves, lasers, holography, and special relativity.

Harpy Eagle by  
Ava Handley

#### DESIGN SCIENCE

Carl Fasano  
3 credits  
IDISC-7005

This courses explores the structure and grammar of three-dimensional space using hands-on methods. We investigate the symmetries and transformations of polyhedra by constructing and deconstructing study models. Stability, mobility, tensegrity, and dome structures are evaluated, and students are encouraged to apply the principles learned to architectural and sculptural designs. Fundamental principles of organization are emphasized and rote memorization of definitions discouraged. The course will stress method, experiments, and risk taking.

### IDISC

#### NARRAGANSETT BAY SOCIOECOLOGY

Bryce Du Bois  
3 credits  
HPSS-W145

This course takes a kaleidoscopic view of Narragansett Bay's socioecology. Readings include literature related to cultural, social, historical, and ecological aspects of the bay and watershed. Classwork includes reading and discussing the literature; experiential and observational activities; and reflecting on those observations, especially the relationships between people and the bay.

