RISD Liberal Arts SPRING
SCIENCE ELECTIVES & SCIENCE STUDIES

SCIENCE ELECTIVES SCI

CONCEPTS IN MATH
Donald Thornton
3 credits,
SCI-1007

Mathematicians are artists of the imagination. This course is an exploration of their abstract conceptual systems which have almost inadvertently yielded spectacularly successful real world results. It also looks at suggested artistic modes of thought and strategies of artistic exploration. Discussions will include imagination as a valid perception of the world (a sixth sense); high orders of infinity; abstraction, idealization and reality; the geometry of vision, other non-Euclidean geometries and the relation of these geometries to our universe.

GLOBAL ENVIRONMENTAL CHANGE
Jason Grear
3 credits,
SCI-1040

Most scientists agree that humanity is changing Earth's environment and consuming natural resources at rates that are unsustainable. This course will focus on perceptions of environmental change arising from the so-called natural sciences: ecology, evolutionary biology, geology, oceanography, climatology. Smaller portions of the course will consider environmental justice and the social consequences of histrionics in both climate activism and denialism, especially the relationships between people and the bay.

SCIENCE STUDIES HPSS

COGNITION FOR DESIGN
Joanna Morris
3 credits
HPSS-S185

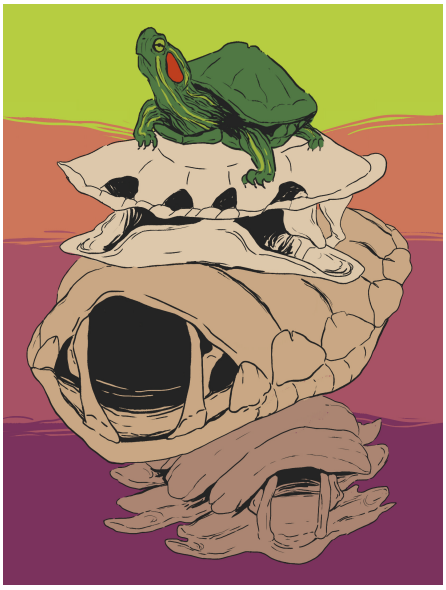
Design represents the intersection of technology and psychology in that designers must communicate to to the people who will eventually use the objects they design what the object is for and how it should be used. In this course we will examine principles of human perception, attention, memory and mental processing that allow designers to tailor their products to the cognitive capabilities of users. HPSS-S101 is a prerequisite for undergraduates.

SCIENCE OF DECISION-MAKING
Louis Gularte
3 credits
HPSS-S211

Are economic decisions and decisions in general the result of a messy fight between a `rational' part of your brain and an `irrational' one, or is decision-making all the result of one underlying and possibly unconscious mechanism? This course is designed to give a tour of the brain in its capacity as the `organ of economics', exploring the neuroscience of decision-making and its implications for how we think about rationality and the nature of value. HPSS-S101 is a prerequisite for undergraduates.

EVOLUTIONARY BIOLOGY
Lucy Spelman
3 credits
SCI-1087

This course examines how organisms change over generations of time through natural selection, mutation, reproductive isolation, and genetic drift, beginning with the search for the origin of species by artist-naturalists Charles Darwin, Alfred Wallace, and Henry Bates. Studies of the fossil record paleontology yielded more evidence and, eventually, the genetic basis of evolution was explained by Gregor Mendel's discovery of heritable traits, later named genes. Today, studies of evolution continue on a molecular scale with DNA and RNA and proteins.



Turtle Shell Evolution by Ren Marchewka

LAS

ECOLOGICAL INVENTION
Tom Doran
3 credits
LAS-E282

This course explores the roots of American ideas about nature, environmentalism, and ecology in early American literature, beginning in the pre-colonial era and ending in the late nineteenth century. In the process, we will study the wide-ranging ecological views of indigenous Americans, Euro-colonial unsettlers of North America, enslaved and emancipated African transplants, and the various inhabitants of the United States in its first century as a nation state.

BIRDS IN BOOKS
Mike Fink
3 credits
LAS-E326

This course will include actual birdwatching during times of migration or nest-building, either locally within the borders of our campus world, or beyond its frontiers. Migration has always meant the crossing of national barriers, and therefore a promise of peace and order despite the turmoil under the skies. We read, we watch, and we design projects relevant to the various meanings of birds to be found in books.

GLOBAL WATER CRISIS
Bonnie Epstein Silverman
3 credits
SCI-1110

In this course, we examine the causes and results of drought, salt-water contamination of wells and streams, shrinking aquifers and more. The goals of this course are threefold: (1) To clarify how water works in earth's systems (2) To outline how humans interact and leave their mark on every step of these cycles and (3) To encourage students to understand these water issues as challenges in need of the intelligent and creative solutions that they are equipped to deliver. Open to sophomore and above.

URBAN ECOLOGY
Maria Aliberti Lubertazzi
3 credits
SCI-1096

This course approaches the field of urban ecology from a natural science perspective. We will learn about a broad variety of North American organisms (vertebrate, invertebrate, plant and pathogen), from diverse habitat types, and their ecological patterns and processes with regard to urbanization. We will also conduct field experiments to evaluate certain patterns in our greater Providence landscape for ourselves. Ultimately, how do urban wildlife patterns affect the lives of our species, Homo sapiens?

NCSS CORE SEMINAR
Peter Dean
3 credits
LAEL-2403

This course will include lectures and discussions of readings and case studies. Occasional guests will include scientists, designers and others engaged at the forefront of environmental activism and research. Students may ground their final course project in a topic connected to their own work, relating it to their major or another concentration, in addition to NCSS. Open to sophomore and junior students. Permission of Instructor required.
Also offered as IDISC-2403; Register in the course for which credit is desired.

THAD

FORMS OF NATURE
Erik Carver
3 credits
THAD-H220

This course studies the diversity of ways that humans have conceived of nature and wilderness. It seeks to understand the deep historicity and variety of such conceptions by following a few theoretical threads that span over vast reaches of time and space as well as across the multiple disciplines constituting the environmental humanities. Through readings, discussions and presentations, students will learn to critically identify and distinguish the range of human expressions of nature with appreciation for historical, cultural, and ideological differences.

RISD **Science** for **Art** and **Design** **Education**