Join Radboud Summer School 2017!

The Physics and Engineering of Life

c change perspective

Radboud Universiteit
How does physics affect the ways in which nature can - and has - engineered life forms? The course focuses on understanding physiological structure, biological propulsion, vision, hearing and navigation - ranging from individual cells to large mammals - and highlighting how the properties of air vs water impact terrestrial vs aquatic life.

You will be introduced to a physics-based understanding of the remarkable ways in which life forms are built, navigate, function, detect and communicate with their environments. There is a special focus on comprehending how the striking distinctions between terrestrial vs marine life forms derive from the dramatic differences in the physical properties of air vs water, in particular: size and shape, locomotion, flying, swimming, capturing nutrients, seeing and hearing. In arriving at these insights, we will be invoking elementary principles from thermodynamics, mechanics, fluid dynamics, diffusion, optics and acoustics.

After this course you are able to:
- Understand many of the amazing physics-based solutions that life forms use to contend with, and succeed in, their environments.
- Explain how and why life forms in water had to develop distinct strategies for motion, hearing, seeing and communicating than life forms on land (in air).
- Apply the core principles of physics and engineering to formulate the equations governing the wide variety of functions carried out by life forms on earth.
- Show how and why some proposed physiological capabilities are precluded by the laws of physics and hence could never have evolved.

**Number of EC**
4 ECTS

**Entry level**
Advanced Bachelor
Course leader
Prof. Jeffrey Gordon, Solar Energy & Environmental Physics, Ben-Gurion University

For whom is this course designed
Undergraduates with a burning curiosity to understand how the remarkable structures and functions we observe in the biosphere are sculpted by the laws of physics - intended for students from the physical, biological and engineering sciences, who have completed the first-year undergraduate physics sequence.

Admission documents
CV (that includes undergraduate courses already completed)

Dates
Monday 7 August – Friday 18 August 2017 (two weeks)

Course fee
€950

Discounts
• 10% discount for early bird applicants. The early bird deadline is 1 April 2017.
• 15% discount for students and PhD candidates from partner universities.
Want to be part of the RSS experience?

More than just a course!
Radboud Summer School is more than an academic event. It is a unique opportunity to meet other international students and researchers and to get to know Radboud University and the city of Nijmegen. Our participants come from all over the world and have different cultural and academic backgrounds. Our programme includes the following activities free of charge: welcome reception, sports activity, guest lecture and farewell drink. We offer also a BBQ, River Cruise, City Tour, Pub quiz and excursion for a small fee.

Have a look at what participants had to say about their experience!

And do not forget to register now!

Deadline application
June 1, 2017

Contact
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www.ru.nl/radboudsummerschool, August 6-18 2017