Welcome to

The Bachelor Programme in Natural Sciences

Speaker:

Head of studies Martin Niss

What is Natural Science?

- Natural science is the oldest kind of science and is unified description for those sciences that concerns themselves with studying nature.

- Biology
- Chemistry
- Computer Science
- Mathematics
- Physics

- The natural sciences play an enormous role for our understand of our surroundings and for society

- Natural scientists solve problems **within** natural science or by **using** natural science to solve problems outside natural science

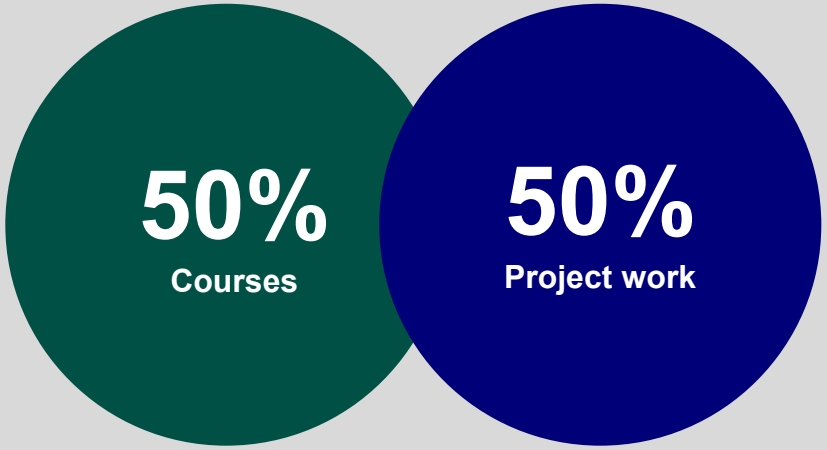
What is the academic focus?

You will become a problem solver who can solve complex problems within natural science and by using natural science

- You will get a strong foundation within general theories and techniques of natural science
- You will learn to examine nature with experiments, theoretical analysis and models through project work and courses in biology, computer science, physics, geography, chemistry, mathematics, environment and statistics
- You will specialize in two disciplinces, starting at your second year

Projects and courses

Your theoretical toolbox



Apply your theory in practice to a problem - and possibly collaborate with a company

Project work in Natural Science

- In the project work, you work with problems that you choose to work on with your project group. Your group solves the problems under the supervision of a researcher
- So, from day one, project work teaches you to think and work like a researcher

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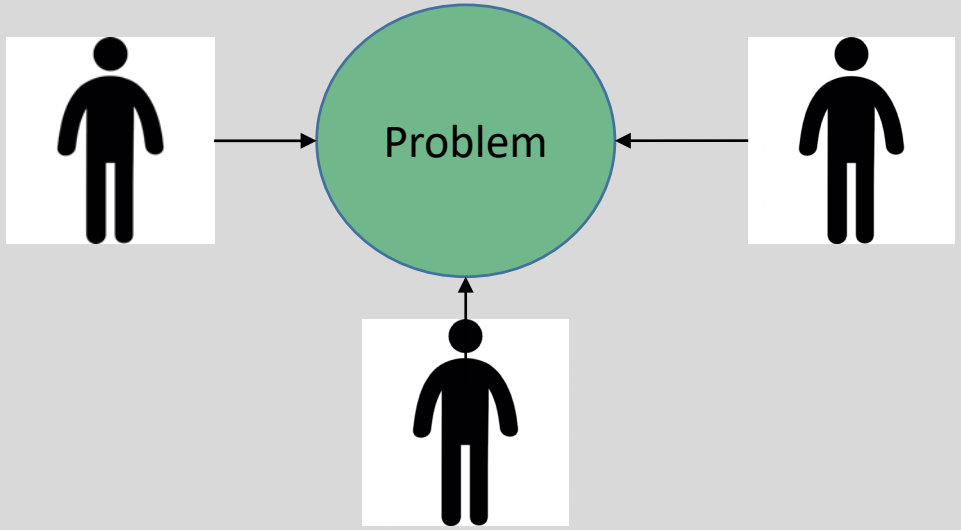

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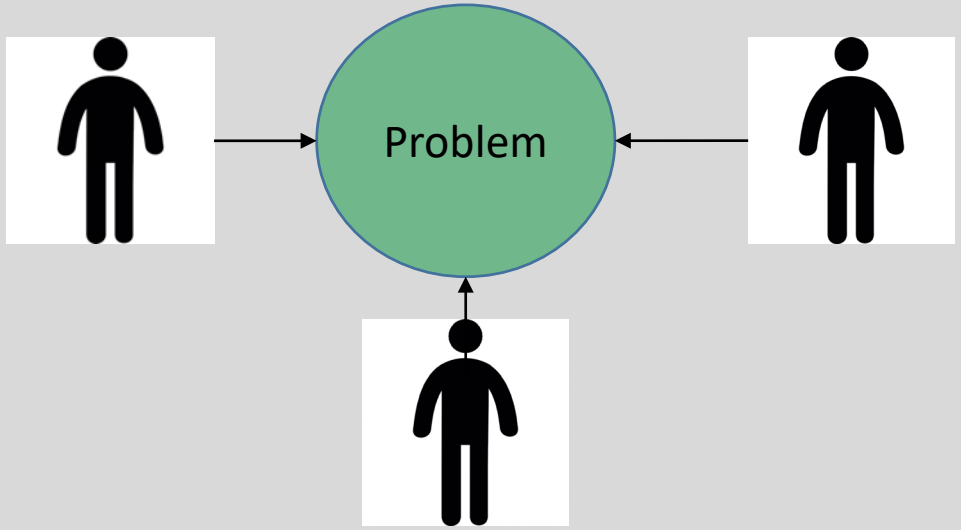

What students work with during their bachelor's degree in Natural Sciences?

- How do we fight antimicrobial resistance?
- How can a mathematical model be used for curing depression?
- How can the CO_2 emission of cars be reduced by using less rolling resistance and improved asphalt?
- Can machine learning be used for developing new drugs?
- How was the germ theory of disease developed?
- How do dye-sensitized solar cells work?

The projects of one student

1. Semester: CRISPR - Gene Editing Technology
2. Semester: The HPV vaccine
3. Semester: The development of "The germ theory of disease"
4. Semester: Treatment of epilepsy
5. Semester: Bacteriosins - Antibiotics of the bacteria
6. Urinary tract infections: Screening, diagnosis and treatment

Examples of courses

Scientific computing
Empirical data
The chemical reaction
Thermodynamics
Classical mechanics
Introduction to ecosystems
Energy and climate change
General molecular biology
Cell biology
Atoms and molecules
Biochemistry
Chemical thermodynamics and kinetics
Analytical chemistry
Functional programming
Organic chemistry
Problem Solving in Physics
Research in molecular biology
Population biology
Mathematical analysis
Linear algebra
… and many more

The bachelor disciplines in Natural Science

Chemistry
Computer Science
Environmental Biology
Mathematics
Molecular Biology
Physics
Bioprocess Science

Bachelor in Natural Sciences at Roskilde University

- High level, where you are close to research and researchers from day one
- You learn to cooperative with people with different disciplinary backgrounds
- The study environment is unique with many small classes and a strong social cohesion
- You don’t have to choose your two bachelor disciplines the first year
- You can choose to continue with a Master’s degree in science at Roskilde University

First example of a teacher

Ass. Professor AlZahraa Alatraktchi

Research areas

- Micro- and nano-sensing
- biomedical systems
- infectious diseases
- cell signaling

Some projects supervised by her

- Antimicrobial resistance
- Pharmacological treatment of Crohn’s disease
- Ethical aspects of using CRISPR

Second example of a teacher

Ass. Professor Tina Hecksher

Research areas

- viscous liquid dynamics
- mechanical/dielectric spectroscopy
- light scattering

Some projects supervised by her

- The double pendulum and random numbers
- Pancake bouncing balloons on superhydrophobic surfaces
- Cosmology – science or metaphysics?

Third example of a teacher

Ass. Professor Kristian Syberg

Research areas

- risk assessment and regulation of chemicals and plastic pollution - including microplastics

Some projects supervised by him

- Monitoring of microplastic polution on beaches
- Degradation of PET plastic
- Plastic in the oceans – who is responisble?

Laboratory facilities

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Live-session

Do you have any questions regarding the presentation?

We will host online sessions in the first week of March, where you can ask questions

Check out ruc.dk for exact date and time

Thank you for watching - and good luck with your choice of education