Innovation - Inspired by Nature Sommer 2013 - LFKK10412
Course Description 2012/2013

Responsible Department Department of Agriculture and Ecology

Earliest Possible Year MSc. 1 year to MSc. 2 year

Duration Outside schedule

Credits 7.5 (ECTS)

Level of Course MSc
Multidisciplinary course between KU, DTU and CBS as well as students from abroad.

Examination
Final Examination
written examination and oral examination
All aids allowed
Description of Examination: Written assignment Oral examination, 20 min.
7-point scale, internal examiner

Requirement for Attending Exam
Active contribution to multidisciplinary group work (reflection on group dynamics, the innovation process and communication).

Organisation of Teaching
The course will draw on the expertise from teachers affiliated to all three contributing Universities and/or faculties for lectures, exercises, expert panel and as facilitators.

Block Placement
Summer Course
Week Structure: Outside schedule, 9-30 August 2013

Language of Instruction
English

Optional Prerequisites
It is a multidisciplinary course where you will work in a number of functions and draw on a diverse set of experiences and knowledge and therefore it is difficult to specify recommended prerequisites.

Restrictions
Max 40 participants. The students have to send a 1 page application and a CV when they apply. Find further instructions on:
http://katapult.ku.dk/aktiviteter/summer_school_og_summer_camp/summer_school_2012/

Course Content
Throughout history, nature has continuously inspired humans to create better and new solutions to our problems. Among other things, it has inspired hunting strategies, modern technology, design solutions, business models, and even structures in social organization and communications. In the knowledge-driven

societies of today and considering the big global challenges we face, innovation based on biology is becoming even more important in our transition towards a sustainable bio-based society. Innovation requires wedding multidisciplinary skills and competencies to imagination and thus demands that people from a variety of disciplines are brought together. This course will focus on innovative solutions inspired by nature in a multidisciplinary context. It will do so by bringing together both students and teachers from various disciplines with different interests, and from a number of educational backgrounds (natural resources, biology, biotechnology, engineering, humanities, management, design and so on).

Students will work together over three weeks to develop innovative solutions to real problems provided by companies, non-profits, or governmental organizations. Selected partners from the service industry, private or public companies will challenge a group of students to create new solutions inspired by nature to a specific problem, process or design. Each group will meet the commissioned holder of their specific assignment a few times during the course. Facilitators will accompany the meetings and classes in general.

Subjects that are major components of lectures and discussions during the course are:

- Biology, diversity and evolution
- Bionics and bio-inspired engineering
- Innovation and innovative design
- Commercialization strategies
- Ideation – what is an idea and a good idea
- Communication skills
- Team dynamics
- Multidisciplinary work

Teaching and learning Methods
The teaching and learning methods will include: Lectures, e.g. on biological organisms and systems - keystone to inspiration, bionics methodologies and innovation process. Exercise and practical assignments, e.g. on team work and communication. The major part of the learning will take place during group work where the students will have to develop an innovative model and learn how to work in a multi-disciplinary setting and how to unite the competences and backgrounds present in the whole group. Each student will be assigned to a group beforehand by the teachers taking into account their interests and background, Each group will have representatives from various universities and disciplines and each group will get a facilitator. In addition it will be possible for the groups to book consultant hours from a panel of teachers with different expretise. Furthermore, students will give and receive feedback on their project work and will practice communicating their ideas through intermediary pitch talks and final presentations on the development of their venture idea. Preparation: reading of literature handed out before couse start is needed.

Learning Outcome
The course will enable students to manage innovation processes based on inspiration gained from the plethora of highly evolved biological functions, systems and processes found in nature. They will gain a basic set of theories and tools in innovation and design. They will be able to create, select and transform ideas into e.g. a prototype, new process, design or method based on a specific assignment and they will be trained in multidisciplinary work. This will be complemented with knowledge on commercialization and implementation strategies for the problem providers from private, non-profit, or governmental organizations.

After completing the course the student is expected to be able to:

Knowledge

• Understand biology as a source for innovation
• Obtain an overview of concept and theory of innovation managements, innovation process models, exploitation and creation
• Understand how to manage e collaboration process in a multidisciplinary setting

Skills

• Read and interpret specific articles and textbook chapters
• Describe and categorize biological solutions according to a specific assignment/topic
• Distribute tasks and responsibilities in a multidisciplinary environment
• Communicate ideas clearly, concisely and confidently in writing and orally to stakeholders

Competences

• Find and explain the evolved solution of specific issues
• Transfer biological knowledge into innovative solutions
• Ability to discuss, evaluate and decide among creative solutions
• Explain innovation models and use novel tools for innovative creation
• Ability to make use of own and other persons' competences in multidisciplinary work

Course Literature

Course material consists of selected scientific articles and book chapters. Students are expected to identify additional group specific literature.

Course Coordinator

Annette Bruun Jensen, abj@life.ku.dk, Department of Agriculture and Ecology/Section of Zoology, Phone: 353-32662

Study Board

Study Committee NSN

Work Load

lectures	20
supervision	20
project work	120
practicals	20
examination	4
preparation	30
	214