



## Course syllabus

Faculty of Technology

Department of Forestry and Wood Technology

4TS041 Innovationer för global påverkan, 22,5 högskolepoäng  
Innovation for Global Impact, 22.5 credits

### **Main field of study**

Mechanical Engineering, Forest and Wood Engineering

### **Subject Group**

Forest Science

### **Level of classification**

Second Level

### **Progression**

A1F

### **Date of Ratification**

Approved by Faculty of Technology 2014-12-02

The course syllabus is valid from spring semester 2015

### **Prerequisites**

General entry requirements for studies on second level, and specific entry requirements: 90 credits within the main field of Mechanical Engineering or Forest and Wood Technology (including a Degree Project of at least 15 credits), 15 credits on the second level (within the programme), and English B/English 6 or the equivalent.

## Objectives

After finished course, the student is expected to be able to:

- describe a business from a technical systems perspective
- identify needs for innovation in a global perspective
- design innovation concepts in a global perspective
- plan for implementation of innovation concepts
- reflect upon the consequences of a technical innovation in a societal and social context
- constructively discuss the importance of examples in a development project
- account for and discuss the complexity of the practical intellect
- discuss how the introduction of formal systems may eventually limit the field of view in a skill.

## Content

The course consists of:

- perspectives on creativity, innovation and entrepreneurship
- analysis of businesses from a systems perspective
- classical and contemporary innovation concepts

- applied methods of innovation
- internationalization and globalization from a perspective of sustainability
- man, intersectionality, innovation and globalization
- leadership for technical innovation processes
- science historical perspectives from classics such as Descartes, Leibniz and Diderot to understand the basics of practical epistemology
- an introduction to the concepts "Dreams of the precise language" and "Rhythm in work"
- an introduction to the concepts Turing machine, Turing's paradox and Turing's man.

## Type of Instruction

The course consists of lectures, workshops and seminars based on the different perspectives presented by the participating disciplines.

The course also contains project work supported by supervisors from all disciplines. Some tasks are provided in cooperation with project organizations.

Obligatory parts are stated in the schedule.

## Examination

The course is assessed with the grades U,3,4 or 5.

The course is examined through project report, artefact, oral presentation, workshops and discussion seminars. On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Students who do not achieve a satisfactory result in the examinations are permitted to make a second attempt approximately 5-8 weeks after the normal examination date.

## Course Evaluation

A written course evaluation is carried out and compiled in a report, which is archived at the faculty. The results and possible measures taken are communicated by the course coordinator and presented to the students the next time the course is given, or in another way deemed suitable by the course coordinator. Other types of course evaluations, for example regular evaluations throughout the course or discussions with students, will be included and encouraged with the aim of ensuring continuous quality development.

## Required Reading and Additional Study Material

### Required reading

Braungart, M. & McDonough, W. *Cradle to Cradle; Remaking the way we make things*. Random House UK. Latest edition. 192 pages.

Burns, P. *Corporate Entrepreneurship*. Palgrave Macmillan. Latest edition. 528 pages.

Chesbrough, H., Vanhaverbeke, W. & West, J. *Open Innovation Researching a New Paradigm*. Oxford. Latest edition. 400 pages.

Chick, A. & Micklethwaite, P. *Design for Sustainable Change - How Design and Designers Can Drive the Sustainability Agenda*. AVA Publishing SA. Latest edition. 184 pages.

Gramatchikova, A. (2014). *Design Thinking in the Organizational Context*. Akademiker Verlag. Saarbrücken. 152 pages.

Hayes, J. *The Theory and Practice of Change Management*. Palgrave Macmillan. Latest edition. 521 pages.

Motoyama, Y. *Global Companies, Local Innovations: Why the Engineering Aspects of Innovation Making Require Co-location*. Ashgate Economic Geography, Ashgate Pub Co. Latest edition. 163 pages.

Moulaert, F., MacCallum, D., Mehmood, A. & Hamdouch, A. *The International Handbook On Social Innovation Collective Action, Social Learning and Transdisciplinary Research*. Elgar online. E-book. Latest edition.

Normann, R. *Reframing Business: When the Map Changes the Landscape*. Wiley. Latest edition. 356 pages.

Polaine, A., Lavrans, L. & Reason, B. *Service Design - From Insight to Implementation*. Rosenfeld Media. Latest edition. 216 pages.

Porter, M. *Competitor and Industry analysis*. Harvard Business Review. E-book.  
Radjou, N., Prabhu, J. & Ahuja, S. *Jugaad Innovation: Think Frugal, Be Flexible, Generate Breakthrough Growth*. Jossey-Bass. Latest edition. 288 pages.

Thackara, J. *In the Bubble Designing in a Complex World*. MIT Press. Latest edition. 336 pages.

Trott, P. *Innovation Management and New Product Development*. Prentice Hall. Latest edition. 648 pages.

Von Hippel, E. *The sources of innovation*. Oxford University Press. E-book. Walker, S. *Sustainable by design: explorations in theory and practice*. Ebook. Latest edition. 244 pages.

Scientific articles. About 500 pages.

### **Reference Literature**

Ashby, M. F., Shercliff, H. & Cebon, D. *Materials: Engineering, Science, Processing & Design*. BUTTERWORTH – HEINEMANN. Latest edition. 672 pages.

Göranzon, B. (2009). *The Practical Intellect*. Santerus Academic Press. 160 pages.

Hannington, B. & Martin, B. *Universal Methods of Design: 100 Ways to Research Complex Problems Develop Innovative Ideas, and Design Effective Solutions*. Rockport Publishers Inc. Latest edition. 208 pages.

Lidwell, W., Holden, K. & Butler, J. *Universal Principles of Design*. Rockport Publishers Inc. Latest edition. 214 pages.