



PhD course PM

F3C5309 Sustainability Science

| Doctoral Course | | |
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| Educational level: Third cycle | Academic level (A-D): D | Credits: 7.5 credits ECTS |
| Subject area: Industrial Ecology | Grade scale: Pass-Fail | Language: Engelska/English |

Course Coordinator

Per Jacobsson, senior advisor, former director of Center for Environmental Science at KTH. E-mail perjac@kth.se, Phone 08-790 9555

Course Responsible and Examiner

Associate Professor Björn Frostell, Industrial Ecology, KTH. E-mail: frostell@kth.se, Phone 08-790 6137

Department

Division of Industrial Ecology, School of Industrial Engineering and Management, KTH-Royal Institute of Technology

Course period and location

29 March-October 2011 at KTH Campus, Stockholm

Admission requirements

Formal education at M.Sc. level or corresponding level

Learning outcomes:

After the course, the student should be able to

- demonstrate an *understanding* of the *increasing complexity* of current development and an *ability* to *adopt a life-cycle perspective* in discussing production and consumption systems,
- *critically analyze* multi-disciplinary and trans-disciplinary information and data to provide informed decision-making in relation to the management of physical and human resources,
- critically *assess* approaches to policy development and institutional arrangements to support sustainable development,
- *effectively communicate a personal scientific attitude and ethos* related to credible science, social engagement and to management of complex decision-making in the face of risk and uncertainty.



Course structure

A. Seminars with invited speakers

Through the first part of the course, a series of Seminars with invited speakers will be conducted according to a separate schedule. In addition, there are recommended www-resources like TED-lectures to attend.

B. Writing an Essay

A key part of the course is to write a personal scientific essay. In this essay, the student shall present and discuss what sustainability science could be in his or her field of research. The essay should take into account aspects that demonstrate that the four course objectives (understanding, ability to critically analyze, critical assessment and personal scientific attitude) have been reached. The literature and seminars serve as an introduction and basis for the intellectual approach in the Essay.

The Essay should be written in a scientific format. It is highly advised to plan and execute the Essay writing in a way that allows the material to be used in the own PhD, work. In the ideal case, the Essay could serve as a backbone for one of the articles in the PhD Thesis, in other cases it could form a chapter in the covering essay of the Thesis.

The size of the Essay should not exceed 6000 words or app. 15 pages in TNR font 12. Plan the Essay for good communication credibility characteristics (lay-out, use of tables and figures, appropriate referencing).

The Essay should be presented and defended in a Seminar at the end of the course. Another student, the opponent, will review the essay and present oral critique, together with a short written analysis of the Essay. More detailed instructions for the essay will be presented at the first course event.

C. Written and Oral Opposition

The student should read and analyze another student's Essay and present his/her opposition (strengths and weaknesses) in a written report of maximum one page. This written report should form the basis for an oral opposition during 10-15 minutes during one of the Essay presentation Seminars.

Examination requirements

Active participation

Attendance during at least 75 % of the course events (seminars, essay presentations)

Essay

Approved oral and written presentation.

Opposition

Approved oral and written opposition on an Essay by another course member.

Literature

Required and related readings and listening according to a separate literature list



Course fee

The course is offered free of charge to students at the School of Industrial Engineering and Management, KTH. For students belonging to schools at KTH and other universities, there will be a course fee of 5000 SEK per student, charged to the host institution upon course start

Application

Your application should be mailed to Per Jacobsson, perjac@kth.se, at the latest 18 March 2011. The application must, in addition to name, birth date, mail address, phone, department and university be accompanied by (max 1 page)

- A presentation of your own field of research and research project
- Your reasons for attending the course

Stockholm 18 March 2011

Per Jacobsson and Björn Frostell