Offered by
ICT Engineering

IT-ESB1

2.0

Engineering Science and Business

ECTS
5

Prerequisites
The course requires at least 1 year of studies at an IT-related programme at AP degree level and up.

Main purpose
The continuous efforts made within information technology (IT) not only affect a diverse array of areas within the development of modern society but also affect them in many different ways. In much the same manner, IT itself is conditioned by its historical, technological, and social contexts.

The main purpose of this course is to examine the (sometimes implicit) assumptions about knowledge and the creation of knowledge made by engineers and scientists within their field. The objective is to gain a deeper understanding of the way engineering and science is conducted, and a basic understanding of fundamentals business activities in an IT company.

In addition, the course will enable the students to:

- Clarify which consequences their scientific point of departure has for their choice of methods, and thus what this means for analysis and assessment of practice as well as to identify basic theory of science problems related to engineering science
- Account for the distinctive character of IT and its relation to other academic disciplines
- Account for what it means to be an ICT Engineer and account for their own professional identity
- Discuss which scientific and ethical consequences the profession implies
- Reflect upon the profession's content, its history, its social and business related functions.
- Finally, the students will come to understand and master the knowledge-based challenges that one meets in a modern information society.

Knowledge
After successfully completing the course, the student will have gained knowledge about:

Science:

What the profession of ICT Engineering is
What knowledge and science are
What role knowledge plays in ICT engineering and computer science
Essential theoretical problems and schools within philosophy of science
What constitutes science, pseudo-science and non-science
The concept of paradigms and paradigm shifts
Business:

Basic concepts of business economics in IT companies
Understanding the basic structure and contents of annual reports
Knowledge about budgeting and calculations in IT companies
Knowledge about capital budgeting.

Skills
After successfully completing the course, the student will be able to:

Science:

Relate critically to empirical-analytical theory and among other things be able to discuss what knowledge is, how it is generated and how it relates to practice
Reflect upon and enter into discussions about computer science perspectives in academic contexts
Assess the relationship between scientific knowledge and practical experience in creating new technologies
Describe types of knowledge and competences composing engineering practice
Business:
Discuss and understand key elements of the economic side of IT and business

Competences
After successfully completing the course, the student will have acquired competences in:

- Using scientific methods to solve practical engineering problems
- Using Annual Reports as a source for getting information about companies
- Understanding of aim and techniques for budgeting and calculations

Topics

Teaching methods and study activities
The mode of instruction will be classroom based and will involve short lectures by the teacher, classroom discussions, group work and student based group presentations. The students are also expected to read the literature before classes. The total workload for the student is expected be around 150 hours.

Referring to the Study Activity Model, the workload is distributed at follows:

CATEGORY 1: 30%
Participation of lecturer and students
Initiated by the lecturer
Lessons, scheduled
Project guidance

CATEGORY 2: 50%
Participation of students - Initiated by the lecturer
Assignments, self-study
Project and group work
Homework and preparation for presentations
Evaluation of the teaching

CATEGORY 3: 20 %
Participation of students - Initiated by students
Homework and preparation for presentations
Self-study
Project work
Study groups
Literature search

Resources
Science: A compilation of texts will be made available online
Business: Literature will be available in StudyNet.

Evaluation

Students are assessed

1) On the basis of class attendance - at least 80 % in both Business and Science;

2) On compulsory activities in Science

3) One compulsory activity in Business

If a student fails to meet one or more of the above requirements for passing the course, the student will have to do a number of written works the following semester and present this for the teachers and the other students that failed the course.

Examination

There is no examination as the course is evaluated based on attendance and compulsory assignments.

Grading criteria

Additional information

Responsible
Lars Bech Sørensen (LBS)

Valid from
1.8.2018

Course type
ICT Engineering;Compulsory Course for all ICT Engineering;4. semester;Business Information Systems;Cross Media;Embedded Engineering; Software Ingeniør;Compulsory for Software Ingeniør;

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