

CIVIL-711

Information Science in Engineering

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Cursus	Sem.	Type
Civil & Environmental Engineering		Obl.

Language of teaching	English
Credits	4
Session	
Exam	Multiple
Workload	120h
Hours	56
Courses	14
Exercises	28
TP	14
Number of positions	

Frequency

Every year

Remark

Variable / Next time: Spring 2020

Summary

An introduction to engineering-relevant computer-science concepts that are hardware and software independent. Outcomes include knowledge of the limits of computing, improved ability to understand the true value of new developments and capabilities to effectively select good computing methodologies

Content

The course is divided into two parts. The first part deals with concepts such as complexity, task analysis as well as strategies for representation and reasoning using engineering knowledge (1 week). The second part (1 week 1 month later) is devoted to seminars by Doctoral candidates on selected topics complemented by a "critique" and supplementary theoretical background by the teacher.

Keywords

logic, complexity, search and optimisation, machine learning, data-base design

Learning Prerequisites**Recommended courses**

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Learning Outcomes

By the end of the course, the student must be able to:

- Develop an efficient software system
- Assess / Evaluate the complexity of an algorithm
- Choose the most appropriate optimisation strategy
- Propose good machine learning strategies

Resources**Bibliography**

Raphael, B. and Smith, I.F.C. Engineering Informatics: Fundamentals in Computer-Aided Engineering, Wiley, 2013

Ressources en bibliothèque

- [Engineering Informatics: Fundamentals in Computer-Aided Engineering](#)

Websites

- <http://imac.epfl.ch/page-8078-en.html>