

MG2135 PLM, 9 credits

Detailed Course Syllabus, Spring 2016

Background

Today, manufacturing companies face fierce international competition, where new products have to be developed and produced at an ever increasing pace. Thus, productivity in the product realization process is of uttermost importance. Companies form joint ventures and cooperate with subcontractors and consultants in order to speed up their work. To facilitate such sharing of work tasks, the use of IT tools, such as CAD, CAM, CAE and PDM/PLM systems is becoming a necessity. However, in order to fully utilize such tools, well-structured and efficient sharing and exchange of information between the different companies and their software systems are necessary.

PLM systems form the kernel of the information management in a manufacturing company and are therefore a fundament for the efficient processes in product development/product realization.

In this course you will learn to identify information flows and product data structures, and how they are represented in a PLM system. You will also learn the most important functions in a PLM system, their architecture and how they are customized to meet the companies' specific needs.

Learning outcome

After passing the course, the student should be able to:

- explain what product data is and describe its role in a producing company through the whole life cycle of a product
- explain the basic principles of documentation of a product including the rules of operations that apply to this
- describe the main functions and the general architecture of a PLM system
- develop a specification for adaptations of a PLM system for a producing company, based on given preconditions
- create an information model based on a number of operations requirements on product data
- use this information model in an implementation of a PLM system to support a company's processes
- account for the fundamentals of relational databases and formulate simple expressions/queries in a modern database management system
- account for similarities and differences between different PLM systems on the market

Literature

All course material (lecture notes/presentations, lab instructions, Aras User's Guide and other reference material) will be published on Bilda throughout the course.

Examination

INL2 - Homework assignment, 1,5 cr, grade scale: A-F

LAB2 - Laboratory exercises, 3,0 cr, grade scale: P/F

PROJ - Project work, 4,5 cr, grade scale: A-F

Teachers

Per Johansson, pj@kth.se

Navid Shariatzadeh, navidsz@kth.se

Lars Lindberg, lghli@kth.se

and guest speakers from Technia, DeLaval, SAAB, Bombardier, and maybe some more company

Requirements for/information on final grade

LAB2: The labs are carried out in groups of two students. For every laboratory task, each group should write a short report about the task.

INL2: This examination module consists of individual reflections on the project, with a specific approach for the members of each project. The reflection should contain approx 3-4 pages.

Individual reflections on the guest lectures, study visit and the workshop. Max 1 page per reflection.

PROJ: The project work consists of a customization of a PLM system, based on a requirement specification from a given customer. You will be divided into large groups (10-12 students in each group). The project will be graded based on the quality and documentation of each group's implementation, and on each students work effort.

The final grade of the course will be based mainly on the project work and the individual reflections, but your overall performance during the course will also be considered.