# MG2135 PLM, 9 credits
# Detailed Course Syllabus, Spring 2020

## 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 Canvas throughout the course.

## Examination

**LAB2** - Laboratory exercises, 3,0 cr, grade scale: P/F
**INL2** - Homework assignment - reflections, 1,5 cr, grade scale: A-F
**PROJ** - Project work, 4,5 cr, grade scale: A-F

## Teachers

Per Johansson, pj@kth.se
... and guest speakers ..

# Requirements for the course components and 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 subject dealt with during the guest lectures and the workshop. **Max 1 page** per reflection.
- Individual report on the project, with a specific approach for the members of each project group. The report should be **3-4 pages**.

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 (8-10 students in each group).

The Assignment INL will be graded mainly on the quality of your individual project report. To receive this grade, all reflections on the guest lectures have to be approved.

The project will be graded individually based on the quality on the implementation, the documentation of it and on each student's work effort in the project. This includes both group and individual tasks.

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