UNIVERSITY OF GOTHENBURG

# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## DIT836 Startups and Industrial Software Product Management, 7.5 credits

Startups och industriell produktledning, 7,5 högskolepoäng

*First Cycle*

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### Confirmation

This course syllabus was confirmed by Department of Computer Science and Engineering on 2022-11-23 to be valid from 2024-01-15, spring semester of 2024.

*Field of education:* Science 100%
*Department:* Department of Computer Science and Engineering

### Position in the educational system

The course is compulsory within the N1SOF Software Engineering and Management Bachelor's Programme.

The course can be part of the following programme: 1) Software Engineering and Management Bachelor's Programme (N1SOF)

| *Main field of studies* | *Specialization* |
|---|---|
| Software Engineering | G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements |

### Entry requirements

To be eligible for this course, students must have successfully completed the course DIT638 Project: Cyber Physical Systems and Systems of Systems, 15 credits, or equivalent.

### Learning outcomes

On successful completion of the course the student will be able to:

*Knowledge and understanding*

- explain industrial innovation challenges, e.g. disruptive vs. sustainable technologies, innovator's role in an enterprise, minimum-viable-product, customer experimentation systems
- describe product innovation and management concepts, such as funding (e.g. crowdfunding, venture capital), licensing (e.g. per user, per feature), A/B testing (e.g. feature toggles)
- explain the fundamentals of start-ups and entrepreneurship in software engineering such as business plan, financing, product placement
- explain the concepts needed to construct and validate business plans, business cases, business models and product/service development roadmaps
- explain the process of identifying product features and how to package them in releases
- explain the process of defining time plans for product releases
- explain ethical challenges related to innovation and software development projects

*Competence and skills*

- develop a business case and business plan
- develop a product release and licensing plan
- develop the product's/service's development roadmap
- describe the product's/service's vision and possible impact on the market
- develop a plan for product management before and after the release based on examples from modern software products

*Judgement and approach*

- evaluate the business models of the existing software-intensive enterprises
- evaluate the disruptiveness of a given software engineering innovation
- classify the intellectual property assets from the perspective of their ownership, i.e. assess who owns an intellectual property asset based on the contract in the project, authorship and licensing
- evaluate the appropriateness of the innovation/development project given the existing ethical schemes such as, for example, IEEE code of conduct

**Course content**

This course prepares the students to collaborate with an industrial partner as either 1) an entrepreneur or 2) innovative software engineer. Therefore the course has two themes:

1. innovation and entrepreneurship
2. industrial software engineering research projects.

These two themes prepare the students to create their own start-ups and to continue interacting with such entities as innovation incubators and innovation financiers. The students are able to understand how business models work, how the companies innovate today and what it means to take a software product from a research prototype stage to a product that can be monetized.

The course also prepares the students to interact with their stakeholders in industrial software engineering projects by explaining different communication strategies, exploring the ethical issues in software engineering (both research and development) and by explaining how to construct the product development roadmaps.

*Sub-courses*

1. **Oral presentation** *(Muntlig presentation),* 2 credits
   Grading scale: Pass (G) and Fail (U)
2. **Written report** *(Skriftlig rapport),* 5.5 credits
   Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)

### Form of teaching

The teaching consists of lectures, seminars, exercises as well as supervision in connection to the exercises.

*Language of instruction:* English

### Assessment

The course is examined by a written report.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

In cases where a course has been discontinued or has undergone major changes, the student shall normally be guaranteed at least three examination occasions (including the ordinary examination) during a period of at least one year from the last time the course was given.

### Grades

The grading scale comprises: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U).
To pass the course, students must receive a passing grade in both the oral presentation

and the project. The grade for the entire course will be determined by the grade given for the project.

### Course evaluation

The course is evaluated through meeting after the course between teachers and student representatives. Further, an anonymous questionnaire is used to ensure written information. The outcome of the evaluations serves to improve the course by indicating which parts could be added, improved, changed or removed.

### Additional information

Course literature to be announced the latest 8 weeks prior to the start of the course.

The course replaces the course DIT835, 7.5 credits. The course cannot be included in a degree which contains DIT835. Neither can the course be included in a degree which is based on another degree in which the course DIT835 is included.