



## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### **DIT414 Design and construction of digital games, 7.5 credits**

Design och konstruktion av datorspel, 7,5 högskolepoäng

*First Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Computer Science and Engineering on 2020-11-03 and was last revised on 2022-11-23 to be valid from 2024-01-15, spring semester of 2024.

*Field of education:* Technology 100%

*Department:* Department of Computer Science and Engineering

#### **Position in the educational system**

The course is part of several programs and is also a single-subject course at Gothenburg University.

The course can be part of the following programmes: 1) Computer Science, Bachelor's Programme (NICOS) and 2) Software Engineering and Management Bachelor's Programme (N1SOF)

#### *Main field of studies*

Interaction Design

Software Engineering

#### *Specialization*

G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

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#### **Entry requirements**

Students taking this course are expected to have experience in software development, equivalent to having completed a course of at least five credits in an imperative programming language such as Java, C# or Python.

Applicants must prove knowledge of English: English 6/English B or the equivalent level of an internationally recognized test, for example TOEFL, IELTS.

## Learning outcomes

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

### *Knowledge and understanding*

- Identify game accessibility issues and incorporate solutions
- Document a game design against budgetary and time constraints
- Identify an audience for which to design a game

### *Competence and skills*

- Design an experiential framework for a game
- Make use of standard game design frameworks
- Incorporate game assets
- Make effective use of game development frameworks
- Develop effective prototypes of a game design

### *Judgement and approach*

- Effectively define success criteria against which a game should be assessed
- Analyze playability tests conducted with actual users
- Iteratively evaluate game goals against user feedback

## Course content

This course is divided into three successive parts. These parts cover design, construction and evaluation of games. The largest part will be given to game development in Unity or Unreal.

The first part is about the topic of game design. It will cover requirements gathering and specification: what do you want a game to do; for whom are you designing a game; and what does success look like? Students on this course will develop the design documentation for their own game as a deliverable for the first part.

The second part will take that design documentation and turn it into an prototype using Unreal or Unity. A playable demo of a game design is produced here.

The third part takes the prototype created in the previous part and focuses on playtesting. This will include ensuring accessibility for an audience that includes disabled gamers. Together those are the deliverable for the final part of the course.

Each part will also introduce theoretical concepts through lectures, academic papers, books, and professional literature.

### *Sub-courses*

## 1. Assignments (*Inlämningsuppgifter*), 7.5 credits

Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)

### Form of teaching

Each part will have a lecture series in which key concepts are introduced, along with practical hands-on workshops where the key actionable skills are taught. Each part has academic and professional reading with which students are expected to become familiar.

*Language of instruction:* English

### Assessment

The examination takes place in two parts. Partly, group work is assessed. Each student also submits an individually written report for assessment. The assessments are the basis for the individual grading.

A student who has taken two exams in a course or part of a course without obtaining a pass grade is entitled to the nomination of another examiner. The student needs to contact the department for a new examiner, preferably in writing, and this should be approved by the department unless there are special reasons to the contrary (Chapter 6 Section 22 of the Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for special educational support, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, the examiner may decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years, after the course has ceased/been changed. The same applies to placements and professional placements (VFU), although this is restricted to just one additional examination session.

### Grades

The grading scale comprises: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U).

### Course evaluation

The course is evaluated through meetings both during and 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 indication which parts could be added, improved, changed or removed.

**Additional information**

The course is a joint course together with Chalmers.

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