School of Business and IT

**Game Programming**  
**Spelprogrammering**  
7,5 Credits/högskolepoäng

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**Ladok code:** 21PG1B  
**Revision:** 1  
**Valid from:** Spring 2014  
**Approved by the Teaching Committee:** 2013-12-11

**Disciplinary domain:** Natural Sciences  
**Subject Group:** Informatics (IF1)  
**Education Cycle:** Basic  
**Main field of study:** Datalogi (DAO)  
**Progressive specialisation:** G1F  
**Prerequisites:** Passed courses in Computer Graphics, 7.5 credits, and Game Design 7.5 credits. Verified knowledge of English corresponding to the course English B in the Swedish Upper Secondary School.  
**Grades:** ECTS (A-F).

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**Learning Outcomes**  
After having completed the course the student is expected to be able to:  
1. construct larger gaming applications with both 2D to 3D graphics using a modern framework  
2. explain and practically apply the basic principles of game-oriented artificial intelligence  
3. explain and practically apply the basic principles of game-oriented physics  
4. explain and practically apply methods for parallel programming of graphics cards using a modern framework  
5. explain and practically apply methods for parallel programming of the game functionality in a contemporary framework  
6. practically apply methods and explain the realization of a distributed game

**Contents**  
The course deepens the student's knowledge in game development with a focus on game programming with the support of a larger framework for game development on commercial gaming platforms. The course connects the students' experience in object-oriented programming, computer graphics and game design. Furthermore, the students are given deeper knowledge in the methods and principles for distributed, parallel and / or multi-threaded programming.

**Forms of Tuition**  
Lectures, projects, tutoring and seminars. Education and literature is in English.

**Forms of Examination**  
The examination consists of an assignment (learning outcome 2-3), a project work (learning outcome 1-6) and an exam (learning outcome 2-6). The project work is examined through a report and a presentation. The project work is performed in groups but the project report is scored individual based on the actual contribution of each student in relation to the learning outcomes.

For the grade E on the whole course, the student must pass all the examined parts. Thereafter, the grade on the whole course is calculated based on the total score of the project report and the exam.

- Greater than or equal to 50% but less than 58% gives a grade of E  
- Greater than or equal to 58% but less than 67% gives a grade of D  
- Greater than or equal to 67% but less than 75% gives a grade of C  
- Greater than or equal to 75% but less than 88% gives a grade of B  
- Greater than or equal to 88% gives a grade of A
Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

**Literature and Other Teaching Means**

**Student Influence and Evaluation**
The course is evaluated in accordance with the school's guidelines, in which students' views will be obtained. The results of the evaluation will be published and fed back to participating and prospective students in accordance with the school's guidelines, and will provide the basis for future course and program development.

**Miscellaneous**
The course is given in the Computer Science Program, as well as a separate course.