Faculty of Health, Science and Technology
Computer Science

Syllabus

Embedded Systems

Course Code:	DVGB15
Course Title:	Embedded Systems *Inbyggda system*
Credits:	4.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

Major Field of Study:
DVA (Computer Science)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2019-02-18, and is valid from the Autumn semester 2019 at Karlstad University.

Prerequisites
30 ECTS credits completed in Computer Science, including Operating Systems (7.5 ECTS credits), or equivalent

Learning Outcomes
Upon completion of the course, students should be able to
- explain the basic principles of programming real-time systems,
- outline the structure and function of real-time operating systems,
- analyse real-time systems in terms of guaranteed fulfilment of time and resource requirements, and
- use an existing real-time kernel to create their own real-time applications.

Content

The course covers real-time operating systems, scheduling and resource management in real-time systems, design and analysis of real-time software, and modelling and verification of time and resource requirements in real-time systems. The course content is treated primarily in lectures, seminars, course literature with reading assignments, and additional materials. Students also complete hand-in assignments. Laboratory supervision is normally offered only for scheduled laboratory sessions and only for the duration of the course.

Reading List
See separate document.

Examination
Assessment is based on a written exam, laboratory reports, and hand-in assignments.

Grades
One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course. For Engineering students, one of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), U (Fail) is awarded in the examination of the course.

Quality Assurance
Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate
A course certificate will be provided upon request.

Additional information
The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.