



HÖGSKOLAN I GÄVLE

Advanced Digital Control Systems 7.5 cr

Avancerad digital reglerteknik 7,5 hp

Set by Faculty of Engineering and Sustainable Development

Version

Set at

Valid from

5/27/19

HT2019

Level	A1F
Education level	Second cycle
Course identifier	EEA312
Credits	7.5 cr
Main field of study	Electronics
Subject group	Electrical Engineering
Disciplinary domain	Technology 100.0 %

Learning outcomes After completion of the course the student shall be able to

1. describe the structure and principles of digital control systems
2. analyse detailed characteristics of digital control systems
3. carry out observations, perform calculations and evaluate the results from experimental computer controlled systems using an appropriate software
4. design and perform implementations of on-line modelling and model-based control solution strategies on real control systems
5. analyze research papers related to digital control systems.

Course content Overview of digital control systems
System identification
Adaptive control
Model predictive control (MPC)
Optimal control
Research, development and trends concerning modern advanced digital control systems

Teaching Lectures and exercises

Prerequisites Bachelor degree in Electronics 180 credits, English 6
Multivariable and Nonlinear Control Systems 7.5 cr and Statistical Signal Processing 7.5 cr or

	equivalent
Examination	Written Examination and assignments
	Module 0010 Written Examination 4 credits, examines learning outcomes 1, 2 and 5, grades A-F
	Module 0020 Assignments 3.5 credits, examines learning outcomes 2-4, grades Pass, Fail
Grade	A, B, C, D, E, Fx, F
Other regulations	Degree Criteria for final grade will be given by course responsible or examiner latest at the beginning of the course.
Sustainable environment	It is possible to include content with sustainable development in this course in the future..

Module			
	0010 Written Examination	4 cr	Grade: AF
	0020 Assignments	3.5 cr	Grade: UG