Program	Level	Second cycle
	Name of the program	Theoretical Computer Science, Applied Mathematics

COURSE

Course title	**Coding and Information Theory**			
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)
CS 410	I	Mandatory / Elective course	8	3+2+0
Lecturer				
Course Goals	The goal of the course is to provide the knowledge on coding and information theory so the students can use their knowledge in practice.			
Learning Outcomes	- Gaining ability to use Coding theory.			

COURSE CONTENT

Noiseless coding.
Noisy coding.
Error propagation and correcting.
Minimal distance.
Linear and nonlinear codes.
Hamming, Golay codes.
Cyclic codes, BCH Reed-Solomon and Justin codes.
Alternant codes and Goppa codes.

LITERATURE

[1] Steven Roman, Coding and Information Theory, Springer, New York, 1992
[2] J.H. van Lint, Introduction to Coding Theory, Springer, 1999.
[3] Tom Richardson, Rűdiger Urbanke, Modern Coding Theory, Cambridge University Press, 2009.

STUDENT WORKLOAD (hours in a semester)

Lectures	45	Tutorial	30	Individual work	125	T o t a l	200

GRADING			**REMARKS**
Criterion	Maximum points	Minimum points	
Midterm exams	50	25	
Homework assignment			
Project			
Laboratory assignments			
Final exam	50	25	
T o t a l	100	55	