Universidad Francisco de Vitoria UFV Madrid

Teaching guide

IDENTIFICATION DETAILS

Degree:	Computer Engineering
Field of Knowledge:	Engineering and Architecture
Faculty/School:	Senior Polytechnic School
Course:	DISCRETE MATHEMATICS
Type:	Basic Training
ECTS credits:	6
Year:	1
Code:	3614
Teaching period:	First semester
Area:	Mathematics
Module:	Basic Training
Teaching type:	Classroom-based
Language:	Spanish
Total number of student study hours:	150

SUBJECT DESCRIPTION

The Discrete Mathematics course uses mathematical elements such as sets and relations, finite and modular arithmetic, induction, recursion, graphs and elements of logic that when applied to Computer Science, can be used to formalise the work of the computer scientist in the specification of new applications, the systematic reasoning of programs, developments in the world of software and, in general, design and work with the models used in Computer Engineering.

SKILLS

Basic Skills

Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

General Skills

Knowledge for preparing measurements, calculations, valuations, appraisals, inspections, studies, reports, task planning and other similar computing work.

An ability to conceive, develop and maintain computer applications, services and systems using software engineering methods as an instrument to ensure quality.

Knowledge of the basic materials and technologies, giving rise to learning and the developing of new methods and technologies, and which also provide huge versatility to adapt to new contexts.

An ability to solve problems with initiative, with effective decision-making, independence and creativity. Capacity for being able to communicate and convey knowledge and skills of the technical computer engineering profession.

Specific skills

An ability to solve mathematical problems that arise in engineering. An ability to apply knowledge of: linear algebra, differential and integral calculus, numerical methods, numerical algorithms, statistics and optimisation.

An ability to understand and use the basic concepts of discrete mathematics, logics, algorithms and computational complexity, and their application for solving engineering-specific problems.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
67 hours	83 hours