

Teaching guide

IDENTIFICATION DETAILS

Degree:	Computer Engineering		
Field of Knowledge:	Engineering and Architecture		
Faculty/School:	Senior Polytechnic School		
Course:	DATA STRUCTURES AND ALGORITHMS		
Type:	Compulsory	ECTS credits:	6
Year:	1	Code:	3616
Teaching period:	Second semester		
Area:	Software Design and Development		
Module:	IT core subject		
Teaching type:	Classroom-based		
Language:	Spanish		
Total number of student study hours:	150		

SUBJECT DESCRIPTION

On the Data Structures and Algorithms course, students consider the design of abstract data structures and cover the operations required and details in implementing them. The course also presents the simplest data structures and algorithmic schemes so that students know how to use them properly, even in a combined manner.

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

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

Knowledge and application of basic algorithmic procedures for computer technologies to design solutions for problems, analysing the suitability and complexity of the algorithms proposed.

Knowledge, design and effective use of the most suitable data structures and types for solving problems.

An ability to design, develop, choose and assess computer applications and systems, ensuring their reliability, security and quality in line with ethical principles, legislation and applicable regulations.

DISTRIBUTION OF WORK TIME

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