

Teaching guide

IDENTIFICATION DETAILS

Degree:	Computer Engineering		
Field of Knowledge:	Engineering and Architecture		
Faculty/School:	Senior Polytechnic School		
Course:	STATISTICAL LEARNING AND DATA MINING		
Type:	Compulsory	ECTS credits:	6
Year:	4	Code:	3657
Teaching period:	Seventh semester		
Area:	Computing		
Module:	Specific Technology		
Teaching type:	Classroom-based		
Language:	Spanish		
Total number of student study hours:	150		

SUBJECT DESCRIPTION

The Statistical Learning and Data Mining course provides students with the theoretical and practical bases to successfully analyse a range of information and to extract reliable information through the exploration of content. Its theoretical foundations come from artificial intelligence and statistical learning. In addition to introducing students to quality of data, the most common statistical learning and data mining techniques are studied.

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 analyse and assess the social and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of a technical computer engineer.

An ability to design, develop, assess and guarantee the accessibility, ergonomics, usability and security of computer applications, services and systems, and the information managed therein.

Specific skills

Capacidad para conocer y desarrollar técnicas de aprendizaje computacional y diseñar e implementar aplicaciones y sistemas que las utilicen, incluyendo las dedicadas a extracción automática de información y conocimiento a partir de grandes volúmenes de datos.

Conocer ampliamente los enfoques de minería de datos, de acuerdo a la norma CRISP-DM.

Conocer los entornos de aplicación de minería de datos clásicos y actuales y los aspectos éticos del conocimiento obtenido.

Comprender los fundamentos estadísticos y matemáticos de las técnicas de minería de datos.

Dominar con soltura las herramientas de análisis que se emplean a lo largo del curso.

Saber seleccionar los modelos y técnicas de minería de datos más apropiados para resolver casos prácticos y en su evaluación de acuerdo a su precisión y coste.

Saber extraer hipótesis relevantes sobre el resultado obtenido y comprobarlas.

Realizar una interpretación crítica de los resultados obtenidos.

Saber representar el modelo y generar informes que incrementen la inteligencia del negocio o permitan visualizar los objetivos perseguidos.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
68 hours	82 hours