

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF INFORMATION SCIENCES & TECHNOLOGY		
ACADEMIC UNIT	DEPARTMENT OF STATISTICS		
LEVEL OF STUDIES	1st Cycle (UNDERGRADUATE)		
COURSE CODE	6238	SEMESTER	8th
COURSE TITLE	Sports Data Analytics		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
Lectures		4	7
COURSE TYPE	Elective - Specialised general knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://www.dept.aueb.gr/el/stat/content/analytiki-athlitikon-dedomenon-7-ects		

(2) LEARNING OUTCOMES

Learning outcomes
Upon successful completion, students will be able to • demonstrate their ability to apply statistical analytics in sports at an appropriate level and demonstrate their ability to apply knowledge acquired from their major to real world models. • demonstrate mastery of data analysis and statistical concepts by communicating critically reasoned analysis through written and oral presentations. • Understand the uncertainty in sports related events • Apply statistical techniques to the processing and interpretation of data from various sports
General Competences
Search for, analysis and synthesis of data and information, with the use of the necessary technology Working independently Team work

Skills to present results
Working in an interdisciplinary environment

(3) SYLLABUS

- Review on distributions and GLM
- Type of sports data, data collection and challenges
- Data Visualization of sports data
- Paired comparison models
- Models for football
- Models for basketball
- Models for tennis and other sports
- Performance analysis for various sports. Indices and rationale
- Probabilities and Betting
- Sports Economics
- Other quantitative methods, scheduling
- Applications with real data

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	YES	
TEACHING METHODS	Activity	Semester workload
	Lectures	61
	Essay writing	47
	Project,	33
	Study and analysis of bibliography	35
	Course total	175
STUDENT PERFORMANCE EVALUATION	Evaluation includes written exams and projects.	

(5) ATTACHED BIBLIOGRAPHY

- Albert, J., Bennett, J., & Cochran, J. J. (Eds.). (2005). *Anthology of statistics in sports*. Society for Industrial and Applied Mathematics.
- Zuccolotto, P., & Manisera, M. (2020). *Basketball data science: With applications in R*. CRC Press.
- Dobson, S., Goddard, J. A., & Dobson, S. (2001). *The economics of football* (Vol. 10). Cambridge: Cambridge University Press.