Subject	Computer science and technologies in sport and movement		
Type	Type	Semester	ECTS
	MANDATORY (M)	V	5

Lecturer	Dr.Sc. Muhamet Avdyli & Milaim Berisha
Aims and Objectives	The aim of the course is to make students aware of the latest technology involved in sport sciences, the effect of these technologies in performance and increase the awareness of students about the changes in sport sciences caused by a technology.
Learning Outcomes	Upon completion of this module, students shall be able to: ✓ Awareness of the latest technology used in sport science ✓ Know the effect of the technology in athletes' performance ✓ Know the effect of the technology in performance measurements ✓ Understanding the changes in training and measurements in spot caused by technology

Content

Week	Topics
Syllabus presentation	
1	Computer and technology in sports and movements science
2	Computer programs used in sports and movements science
3	Phone applications in use for training and performance measurements
4	Wearable technology (trackers, GPS, heart ate monitors, etc)
5	Motion analyzers (Vicon, Qualisys, Noraxon, Kinovea, Tracker, etc)
6	Data-driven programs (statistics for strategy development)
Mid-term exam – 1	
7	Virtual reality (E-sports)
8	Technology of sports equipment
9	Sports technology and health (nutrition, hydration programs, etc.)
10	AI in sports science
11	Technology used in education and sports learning (3D Gym)
12	Traditional methods of training versus technological methods in sports and movements science
Mid-term exam – 2	

Teaching/Learning Methods

Activity	Weight (%)
Lectures	40%
Lab	40%
Research	10%
Independent learning	10%

Assessment Methods

Methods of assessment:	%
Participation	10%
a) Mid-term exam -1	20%
b) Mid-term exam - 2	20%
Lab	50%

Resources

Resources	Number
Lectures	1
Presantations	1
Web of science	1
PubMed	1
Scopus	1

ECTS Workload

Activity	Weekly hours	Workload
Lectures	1	12
Lab	2	24
Independent learning	n/a	64
Examination preparation	n/a	25

Literature

- Noraxon: https://www.noraxon.com/
- GPS catapult system: https://www.catapult.com/

	- Gym aware system: https://gymaware.com/ - Fit light system: https://www.fitlighttraining.com/?srsltid=AfmBOopFBgXDrDJO_WBcyZ54lux5ymgb92vYkkxy-5Zci2ynB7dlnJWu - Sigma balance platform: https://www.markmed.pl/en/sigma_balance_diagnostics - My jump: https://play.google.com/store/apps/details?id=com.my.jump.lab&hl=en_US - VALD Performance: https://valdperformance.com/ - Computer Science in Sport: Modeling, Simulation, Data Analysis and Visualization of Sports-Related Data: https://link.springer.com/book/10.1007/978-3-662-68313-2 - Serbest, K., Berisha, M., & Cilli, M. (2018). Dynamic analysis of three different high bar dismounts in the simmechanics environment. *Journal of Mechanics in Medicine and Biology*, *18*(03), 1850030. - Berisha, M. (2021). Determination of flexibility and mobility levels for female physical education students and motor asymmetry analysis. *Physical education of students*, *25*(5), 272-279. - Berisha, M., Ceyhan, G., Büyükergün, A., & Gjaka, M. (2023). A New Approach to Active Flexibility Measurement in Students of Sports Sciences Faculties. *Kinesiologia Slovenica*, *29*(2), 195-207.
Ethical standards	This course follows UBT College's Code of Ethics, requiring all students to behave accordingly. Any case of academic misconduct, including but not limited to cheating, plagiarism, or other forms of dishonesty, will lead to significant punishment such as failure of the specific assessment or the entire course, as well as further disciplinary measures in accordance with UBT College's academic integrity policies.
Contact	Muhamet.avdyli@ubt-uni.net & milaim.berisha@ubt-uni.net