Course Syllabus

Code - Course Title	**YBS402 - Simulation Modelling and Analysis**
Course Type	VIII. SEMESTER
Laboratory + Practice	4+0
ECTS	**5.0**
Language of Instruction	İngilizce
Course Type	Required Courses

Mode of Delivery	Face to face
Recommended Resources	Simulation Modeling and Analysis (Averill M. Law)

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Types of simulation	
Week - 2		Randomness and probability distributions	
Week - 3		Discrete Event Simulation (DES) fundamentals: events, queues, resources	
Week - 4		Implementing DES models in simulation software	
Week - 5		Output analysis	
Week - 6		Mid-term exam	
Week - 7		Variance reduction techniques	
Week - 8		Model verification and validation	
Week - 9		Experimental design for simulation and ANOVA analysis	
Week - 10		Simulation based optimization	
Week - 11		Agent based modelling (ABM) and System Dynamics (SD) overview	
Week - 12		Application case studies	
Week - 13		Communicating results: dashboards, visualization and decision support integratration	
Week - 14		Final exam	

Learning Outcomes

#	Learning Outcome
1	Explain different simulation types
2	Develop discrete event simulation models

Learning Outcomes

#	Learning Outcome
3	Discuss simulation outputs
4	Design simulation experiments
5	Communicate simulation results effectively

Sustainable Development Goals

No content has been provided.

Course Theme

No content has been provided.

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	0	0	0
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	0	0	0
Ödevler	0	0	0
Proje - Rapor - Sunum Hazırlama	0	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	0	0	0
Final Sınavı Hazırlığı (sınav süresi dahil)	0	0	0
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	0	0	0
Staj Uygulaması	0	0	0
		Calculated ECTS	**0**

Assessment Method and Passing Requirements

No content has been provided.