Course Syllabus

Code - Course Title	**VBA412 - Machine Learning Operations: From Experimentation to Production**
Course Type	VIII. SEMESTER
Laboratory + Practice	3+0
ECTS	**5.0**
Language of Instruction	İngilizce
Course Type	Area Elective Courses
Course Instructor(s)	DR. ÖĞR. ÜYESİ ÖNDER DORAK

Mode of Delivery	Face-to-face

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Model Tracking: Managing experiment versioning (MLflow)	
Week - 2		Organizing large artifact repositories	
Week - 3		Implementing comprehensive model logging	
Week - 4		Containerization: Computing environment isolation (Docker)	
Week - 5		Designing scalable microservices architectures	
Week - 6		Deploying models seamlessly to production	
Week - 7		CI/CD for ML: Constructing automated testing pipelines	
Week - 8		Executing continuous deployment strategies	
Week - 9		Setting up automated real-time model monitoring	
Week - 10		Model Maintenance: Detecting data drift	
Week - 11		Detecting concept drift in production	
Week - 12		Scheduling automated model retraining pipelines	
Week - 13		Managing the full machine learning lifecycle	
Week - 14		Enterprise production case studies	

Learning Outcomes

#	Learning Outcome
1	Manage rigorous experiment versioning utilizing MLflow tools

Learning Outcomes

#	Learning Outcome
2	Design secure containerized microservices utilizing Docker
3	Construct automated CI/CD pipelines for models and code
4	Detect production data drift to schedule automated retraining

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.