İçerik

Ders Kodu	Dersin Adı	Yarıyıl	Teori	Uygulama	Lab	Kredisi	AKTS
IND434	Tedarik Zinciri Analitiği ve Lojistik 4.0	7	3	0	0	3	4

Ön Koşul	
Derse Kabul Koşulları	

Dersin Dili	Fransızca
Türü	Seçmeli
Dersin Düzeyi	Lisans
Dersin Amacı	The main objective of this course is to explain how to incorporate real-time data and big data to the operations in supply chain to improve the key performance indicators (KPIs). In the first week, we introduce the fundamental concepts of Logistics 4.0. In the remaining 13 weeks, we will introduce and explain how to apply big data analytics in supply chain. The objectives of the course in detail are as follows: 1- Explain the fundamental concepts in Logistics 4.0, the technologies that enable to gather real-time data (RFID, IoT) and to store big data (cloud). Explain how these technologies influence the classic supply chain. 2- Explain several statistical learning techniques. 3- Explain how to analyze the resilience of the supply chain and risk management in supply chain under extreme conditions.
İçerik	Week 1: Introduction to Logistics 4.0: Fundamental concepts, technologies to obtain real-time data, and store big data. Explain the advantages and disadvantages of using big data in supply chain. Explain the KPIs of supply chain and visualization of these KPIs in presence of real-time data. Weeks 2-3: Supervised learning techniques for prediction with python and Excel applications Weeks 4-5: Supervised learning techniques for classification with python applications Week 6: Resampling techniques with python applications Weeks 7-8: Dealing with big data Week 9: Midterm Week 10: Tree-based methods Week 11-12: Unsupervised learning Week 13-14: Supply chain resilience and risk analysis
Kaynaklar	An Introduction to Statistical Learning, G. James, D. Witten, T. Hastie, and R. Tibshirani, Springer Texts in Statistics

Teori Konu Başlıkları

Hafta	Konu Başlıkları
1	Fundamental concepts in logistics 4.0
2	Supervised learning techniques for prediction: simple and multiple linear regression with python and Excel applications
3	Supervised learning techniques for classification: logistic regression and linear discriminant analysis with python applications
4	Cross-validation and bootstrapping
5	Dealing with big data: subset selection, shrinkage methods, dimension reduction methods
6	Three-based methods
7	Unsupervised learning: principal component analysis, k-means clustering, hierarchical clustering
8	Supply chain resilience and risk analysis

Hafta	Konu Başlıkları
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