DTU

62T22/62533 Applied Machine Learning and Big Data
Course Planning 2025 Spring

Date	Time	Session	Topic	Theme
06-feb	17:00-20:30	Lecture 1	Course introduction. AI and ML in a big picture.	Introduction of the course. Programming environment setup.
13-feb	17:00-20:30	Lecture 2	Preliminaries of ML. Foundational mathematics of ML.	Foundations of Programming, Data Science, and Mathematics.
20-feb	17:00-20:30	Lecture 3	Regression.	Supervised Learning.
27-feb	17:00-20:30	Lecture 4	Classification.	
06-mar	17:00-20:30	Lecture 5	Clustering.	Unsupervised Learning.
13-mar	17:00-20:30	Lecture 6	Neural Netowrk and Backpropagation.	Deep Learning.
20-mar	17:00-20:30	Lecture 7	Convolutional Neural Network.	
27-mar	17:00-20:30	Lecture 8	Cross-Validation. Bias-Variance Trade-off. Bootstrap.	Resampling Methods.
03-apr	17:00-20:30	Lecture 9	Kernel Methods. (Support Vector Machine etc.)	Advanced Topics.
10-apr	17:00-20:30	Lecture 10	Ensemble Models. (Decision Tree, Random Forest, etc.)	
Easter Week				
24-apr	17:00-20:30	Lecture 11	Analytic Validation. (A/B Testing, Model Explainability)	
01-maj	17:00-20:30	Lecture 12	Guest Lecture (Dr. Yijun Bian from KU)	ML Fairness
08-maj	17:00-20:30	Lecture 13	Guest Lecture (Dr. Xin Gao from KU)	ML for Social Science
15-maj	17:00-20:30	Lecture 14	Project Helping Session.	Hands-on ML.

Remarks
Please bring your laptops to each session.