

2.874/2.884/10.354/10.554 Process Data Analytics**Fall 2024**

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Lecture	Date	Subject	HW due
L1 RDB	W 9/4	Introduction	
L2 RDB	W 9/4	Introduction to linear regression	
L3 RDB	W 9/11	Linear and nonlinear regression	HW 0
L4 RDB	W 9/11	Introduction to FibeR Extrusion Device and First Visualizations	
L5 RDB	W 9/18	Towards model fitting + SPC + More	HW 1
L6 RDB	W 9/18	Regression on fiber extrusion – Digital twin	
L7 RDB	W 9/25	Linear and nonlinear regression II (change title)	
L8 RDB	W 9/25	Tips and Traps	
L9 RDB	W 10/2	Selection of methods for model prediction and more examples of successes and failures of machine learning	HW 2
L10 RDB	W 10/2	Matrix calculus with model applications (or change content)	
L11 RDB	W 10/9	Times series analysis, Parts A and B	
L12 RDB	W 10/9	Times series analysis, Parts C and D	
L13 RDB	W 10/16	Time series – Model fitting	HW 3
L14 RDB	W 10/16	Time series – Nonlinear model fitting	
L15 RDB	W 10/23	Decision trees: preparation for forests	
L16 RDB	W 10/23	Random forests	
L17 RDB	W 10/30	Random forest case study	Project 1
L18 RDB	W 10/30	Video analytics	

L19 RDB	W 11/6	Latent variable methods: Introduction	
L20 RDB	W 11/6	Latent variable methods: Faults, learning, CVA	
L21 RDB	W 11/13	Case studies	HW 4
L22 RDB	W 11/13	Case studies	
L23 RDB	W 11/20	Latent variable methods: Big Data analytics and tensorial data, LVMs, and missing data	
L24 RDB	W 11/20	Latent variable methods: Big Data analytics and tensorial data, LVMs, and missing data	
L25 RDB	W 11/27	Nonlinear analytics I	HW 5
L26 RDB	W 11/27	Nonlinear analytics II	
L27 RDB	W 12/4	Nonlinear analytics III: Support Vector Machines	
L28 RDB	W 12/4	Nonlinear analytics IV: More Case Studies	
L29 RDB	W 12/11	More Case Studies	
L30 RDB	W 12/11	More Case Studies, Review of course content	Project 2