GENERAL INFORMATION					
Subject name	SP1. Analytics and Artificial Intelligence (AI)				
Semester	2	Character	Compulsory	Type of module	.
ECTS	5		Modality	On site	
Higher Education Institution(s)			FH Joanneum		
Lecturer(s)			Paul Hofmann, Stefan Neunkirchen		

LEARNING AND TEACHING	
ESCO Occupation(s)	Manufacturing engineer Calculation engineer
ESCO Skill & Competences	Independently solve statistical problems on new datasets. Apply AI tools to tackle challenges in the industry.
Learning outcomes	KU1, IN1
Teaching methods	Lectures. Case Studies. Collaborative and Problem-Based Learning (PBL).
Assessment methods	Examinations. Problem sets and exercises. Oral presentation & defence. Technical reports.

CONTENTS

Previous requirements (if necessary)

None

Content index

- Concepts and methods of AI and Machine Learning and corresponding tools
- Data preparation for AI applications
- AI applications in industry illustrated based on selected examples
- AutoML, Validation, Deployment, Choice, Model Accuracy
- Time Series Analysis (trend, seasonality, residuals)
- Autoregression, Moving Average (ARMA, ARIMA, SARIMA)
- Forecasting Methods

SUPPORTING BIBLIOGRAPHIC REFERENCES

Lecture notes; handouts;

Books:

- Russell/Norvig: Artificial Intelligence A Modern Approach
- Tariq Rashid: Make Your Own Neural Network

Journals:

- Foundations and Trends in Machine Learning, University of California, Berkeley
- Industrial Artificial Intelligence, Springer
- The Journal of Artificial Intelligence, Elsevier

SOFTWARE

Python