

## Applied Data Science in FinTech

### 1. COURSE SPECIFICATIONS

<b>COURSE TITLE</b>	Applied Data Science in Fintech
<b>TEACHING LANGUAGE</b>	English
<b>COURSE SUPERVISOR</b>	Dr. Mario Gellrich Zurich University of Applied Sciences, Switzerland
<b>OFFICE HOURS</b>	On appointment (at school or by MS Teams)
<b>CLASSROOM(S)</b>	See course portal
<b>COURSE HOURS</b>	2 x 6 hours lectures and exercises
<b>FACILITATORS</b>	

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Data science is an interdisciplinary field that uses scientifically sound methods, processes, and algorithms for extracting insights from both structured and unstructured data. FinTech follow technological advancement and the development of state-of-the-art data science methods with keen interest. Examples of such data science technologies include agent-based simulation, and augmented analytics.

The course takes place on two consecutive days. On the first day, the students will learn how to develop an augmented analytics application from scratch and how to automate data analysis using this application. On the second day, the students will learn how to use data science methods to develop an agent-based simulation model for the assessment of credit risks. The exercises will integrate the most important aspects of data science, such as problem framing, data collection and preparation, model development and assessment, and the deployment of models and algorithms.

## 2. LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Frame problems related to specific use cases, such as credit risk and automatic trading.
- Work with the scientific programming language, Python.
- Read data in Python and prepare it for modeling.
- Conduct exploratory data analysis (EDA) using Python.
- Build multi-agent simulation models to better understand credit risk mechanisms.
- Develop and deploy an augmented analytics application with Python from scratch.
- Deploy models and algorithms.

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## 3. EVALUATION

### Assessment activities:

Participants will attend lectures and perform practical lab exercises with the Python programming language. Hence, participants will have a good mixture of theory and hands-on exercises.

### Evaluation assignments and criteria:

Student evaluations will be accessed around the following deliverables:

- Implementation of two use cases (credit risk modelling; augmented analytics)
- Presentation of the results

## 4. LEARNING ACTIVITIES

### Organization, methods and pedagogy:

- Workshops
- Individual and group exercises
- Presentations

### Bibliography:

Materials will be updated regularly on the course portal at <http://baisummer.com>.