Hes·so
Haute Ecole Spécialisée
de Suisse occidentale

DESCRIPTION OF ELECTIVE COURSE

Name of the school : Haute école de gestion de Genève	Academic Year: 2025-2026

FIRST PART: DESCRIPTION OF MODULE	
1. Domain	Business and Services
2. Department	International Business Management
3. Course name	Machine Learning Applications in Business
4. Code	310XX
5. Type of education	☒ Bachelor ☐ Master ☐ MAS ☐ ☐ DAS / CAS / single days
6. Number of ECTS Credits	**5**
7. Prerequisites	☒ Validation of the modules in semesters 1 and 2 ☒ Attendance of the modules in semesters 3 and 4 for full-time students, and semesters 5 and 6 for part-time students ☐ ……..
8. Teaching language	☐ French ☐ German ☒ English ☐ Other: ……..
9. Objectives	In an era where data drives decision-making, mastering digital tools and machine learning is essential for aspiring analysts, managers, and consultants. This hands-on course provides a structured introduction to programming with python, data analysis, and machine learning, equipping students with the necessary technical and analytical skills to thrive in the digital economy. The course begins with foundational Python programming and progresses to machine learning techniques, emphasizing their real-world applications. Students will gain proficiency in data manipulation, model implementation, and business-oriented analysis. The final stage of the course focuses on data visualization, enabling students to present insights effectively using Python. Throughout the semester, students will work with real-world datasets, engage in interactive exercises, and develop a strong intuition for statistical and machine learning concepts. By the end of the course, participants will have the ability to code in Python, apply machine learning techniques, and create compelling data visualizations—critical skills for careers in data-driven industries.

	At the end of this course, students should be able to: • Use Python and Jupyter Notebook as a tool for trading and business analysis • Apply AI and machine learning to datasets in finance, trading, and marketing • Use AI to define and predict strategies for finance, digital marketing, and trading • Have skills to add the keywords 'machine learning', 'Python', and 'data analysis' to their CVs (all three will increase your job chances) .
10. Contents *(General themes and descriptions, the accurate content may change)*	This very applied course is structured as a hands-on introduction to Python and applications of machine learning. The course focuses on three fundamental skills: coding skills, machine learning and business communication • Core concepts of the Python programming language • Handle and navigate big data • A primer on artificial intelligence and machine learning • Applied financial trading strategies • Integrate machine learning into e-commerce, apps and websites • Automated tasks • Creating great visualizations and graphics
11. Evaluation	The grading of the module shall be based on: • A written exam in week 16 of the semester; **and/or** • Mid-term assessments during weeks 1 to 14 according to the decision of the instructor. (The methods and weightings are communicated by the instructor before the evaluations)
12. Remediation/repetition	☒ Compulsory remediation if the module grade is between 3.5 and 3.9 / 6. When subject to a remediation, only the grade of the remedial exam will be taken into account (maximum grade 4.0). A repeated module cannot benefit from a remedial exam. ☐ No remediation
13. Coordinator / main instructor	Jan Erik Meidell
SECOND PART: LOCATION OF THE MODULE IN THE STUDY PLAN	
14. Level	☐ Basic module ☐ Advanced module ☒ Specialized module ☐ Other: ……..
15. Characteristics	☒ Module is mandatory (which could lead to final dismissal from the program, cf. art.15, al.1, « Statut des étudiant-e-s bachelor »)

16. Type	☒ Main module ☐ Module linked to main module ☐ Optional module ☐ Other: ……..
17. Time organization	☒ Module over 1 semester ☐ Module over 2 semesters ☒ Spring semester ☐Fall semester ☐ Other