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Haute Ecole Spécialisée
de Suisse occidentale

DESCRIPTION OF ELECTIVE COURSE

Name of the school : Haute école de gestion de Genève	Academic Year: 2026-2027

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	At the end of this course, students will be able to: • Think like a data-driven business professional, using data, algorithms, and AI tools to support real managerial and strategic decisions. • Use Python and Jupyter Notebook confidently to explore, clean, analyze, and visualize business data without being a programmer. • Apply machine learning models to real business problems in finance, trading, marketing, and digital platforms, and understand when these models add value — and when they do not. • Translate data and model outputs into clear business insights, recommendations, and strategic actions that non-technical managers can understand. • Understand how AI is actually used in companies, from pricing and customer targeting to risk analysis, fraud detection, and automation. • Build a strong employability profile, with practical, hands-on skills in Python, machine learning, and data analysis that can be credibly presented on a CV and discussed in job interviews.

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10. Contents *(General themes and descriptions, the accurate content may change)*	This highly applied course provides a hands-on introduction to Python and machine learning for business applications. Students learn by working directly with real datasets and concrete business problems rather than abstract theory. The course emphasizes three core competencies: practical coding skills, applied machine learning, and business communication of data-driven insights. • Python for business analytics: core programming concepts needed to work efficiently with data in a business environment. • Working with real-world data: loading, cleaning, filtering, and structuring large and imperfect datasets commonly found in companies. • Introduction to artificial intelligence and machine learning: intuitive understanding of key concepts and algorithms used in modern business analytics. • Applied machine learning models for finance, trading, marketing, and customer analytics, with a focus on interpretation and decision-making. • Business use cases of machine learning in e-commerce platforms, digital applications, and websites, including personalization, prediction, and automation. • Automation of repetitive business tasks using Python to improve efficiency and productivity. • Data visualization and storytelling: creating clear, insightful charts and visual outputs that support managerial decisions and professional presentations.
11. Evaluation	The grading of the module shall be based on: • A written exam in week 16 of the semester; **and/or** • Hand-in projects (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