

Module description

Field of study: Business, Management and Services

Degree course: BSc HES-SO in International Business Management

Major: N/A

Subject to the *Règlement sur la formation de base (Bachelor et Master) à la HES-SO* (R-FB hereafter) and *Regulations for the degree programme Bachelor of Science HES-SO in International Business Management* (R-IBM hereafter; collectively *program regulations* hereafter); and *Règlement d'études des filières Bachelor de la HEG* (RE-HEG hereafter).

1. Title of module	Data Analytics	2026-2027
Code: 3161	Revision date / Effective date: 2026-06-30 / 2026-09-14	
Equivalent to: 3071	ECTS Credits: 6 Credits	
Level: ☒ Basic module ☐ Further studies module ☐ Advanced module ☐ Specialised module ☐ Other: ...	Type of course: ☒ Bachelor's ☐ Master's ☐ MAS ☐ DAS ☐ CAS ☐ Other: ...	
	Characteristic: ☒ Compulsory module	
Type: ☐ Main module ☐ Module linked to main module ☐ Optional or subsidiary module ☐ Other: ...	Time schedule: ☐ Module over 1 semester ☒ Module over 2 semesters ☐ Spring semester ☐ Autumn semester ☐ Other: ...	

2. Organisation

Primary teaching language:

- | | |
|---|-------------------------------------|
| ☒ English | ☐ French |
| ☐ German | ☐ Italian |
| ☐ Spanish | ☐ Other: ... |

Module composition

Module composed of the course units: 31611-Data Analytics I; 31612-Data Analytics II

Attendance:

Attendance is mandatory for all classes and other activities specified in the module description or syllabus, per art. 24 of the *RE-HEG* and unjustified absence may entail penalties. Where unjustified absence carries penalties, attendance is regularly monitored via written or digital signature, and any penalties are applied in accordance with institutional regulations.

Penalties for absences:

- ☒ Attendance at all scheduled teaching activities is mandatory and constitutes a condition for validation of the module. Students whose attendance falls below 80% of these activities are not eligible to be registered for the final examination which entails failure of the module.
- ☐ Attendance at all scheduled teaching activities is mandatory. Each unjustified absence results in a grade penalty of 0.5/6 applied to the final module grade.
- ☐ Each unjustified absence at scheduled course activities identified as mandatory or compulsory in the module description or syllabus entails a grade penalty of 0.5/6 applied to the final module grade...
- ☐ Absence from activities identified as mandatory or compulsory in the module description or syllabus results in the student not being entitled to receive a grade for any associated assessment.

- ☐ Attendance at all scheduled teaching activities contributes directly to the achievement of learning outcomes. Absences are not directly penalised. Attendance may nevertheless be monitored for pedagogical purposes.
- ☐ Additional details: (optional)

3. Prerequisite

- ☐ To have validated the module
- ☐ To have followed the module
- ☒ No prerequisite
- ☐ Other: ...

4. Skills to be gained / general learning objectives**Data Analytics**

This module (containing the courses Data Analytics 1 and 2) equips students with the knowledge and skills to transform raw data into actionable insights for business decision-making. Students build a foundation in the fundamentals of data analytics while gaining proficiency with advanced tools for data exploration and visualization. They learn to clean, transform, and integrate data from multiple sources, and apply analytical techniques such as optimization, visualization, and dashboard design to support effective data storytelling. By the end of the module, students are able to leverage data analytics to address complex business questions and drive evidence-based management.

Data Analytics 1

At the end of this course, students will:

- Understand core principles of data analytics and their application in business contexts
- Develop proficiency in using common business tools such as Microsoft Excel for data cleaning, transformation, analysis, visualization, and solving multivariate optimization business problems
- Learn how to connect to and integrate different data sources

Data Analytics 2

At the end of the course, students will:

- Understand the principle of data modeling and database design, and acquire basic knowledge of Structured Query Language (SQL) for database query
- Acquire a good command of a business intelligence tool such as Tableau to quickly answer business questions using visual data analysis, data exploration, and reporting techniques
- Get hands-on experience on the benefits of automating data preparation with tools like Tableau Prep
- Learn how to connect to and integrate various data sources to answer business questions with visual data analysis

5. Teaching and content**Autumn Semester****Data Analytics 1**

This course equips students with essential data analysis skills for business decision-making. Through hands-on use of spreadsheet software such as Microsoft Excel, it covers data cleaning, transformation, and integration, enabling students to analyse complex business problems and provide inputs for fact-based decision-making.

- Data types and structures, cell formats, absolute/relative references, operators
- Data cleaning, such as text functions, advanced filters, sorting, conditional formatting
- Data transformation, such as formulas (Rounding, Math, Text, Stats, Logical, Dates), pivot tables, lookup functions
- Data visualization, such as pivot tables
- Data connection, such as files (Excel, csv, xml, json), structured Web content
- Structuration of business optimization problems for their processing with tools like the Microsoft Excel Solver add-on

Spring Semester

Data Analytics 2

This course develops students' ability to transform raw data into actionable insights through database querying, data preparation, and visual analysis. With hands-on use of SQL, business intelligence tools, and complementary tools, it covers data modeling in databases, query writing, data transformation, data storytelling, and the design of effective dashboards.

- Basic SQL queries and join statements to retrieve data from multiple tables in a relational database
- Data preparation and transformation with tools like Tableau Prep
- Data visualization in tools like Tableau: connect to files, databases, APIs, and GIS. Use filters, groups, calculated fields, LOD expressions, and parameters
- Build dashboards: design interactive dashboards

6. Assessment and validation methods

Each course syllabus available on the moodle platform Cyberlearn describes the assessment and validation methods.

☒ Further details regarding assessment and validation methods are specified in the module or course unit syllabus available on the Cyberlearn Moodle page of the module or course unit.

7. Remediation and repetition

Module repetition and remediation are governed by the *program regulations* as well as the *RE-HEG*.

Remediation

Module eligible for remediation if the overall module grade is between 3.5 and 3.9, in accordance with Art. 29 R-FB. In case of remediation, grades for continuous assessments or bonus grades are not carried over.

☐ Module composed of multiple course units evaluated individually: remediation applies exclusively to those course units for which the grade obtained is below 4.0. Remediation takes the form of an additional assessment for each course unit concerned, covering the learning objectives of that course unit, as determined by the relevant course-unit coordinator.

☒ Module consisting of a single course unit, or of two integrated course units evaluated jointly at module level: remediation takes the form of one additional assessment covering the learning objectives of the module as a whole.

Repetition

In the event of module repetition, students are required to complete the module in accordance with the following provisions: for modules comprising more than two course units, only those course units for which a grade below 5.0 was obtained must be repeated; for modules comprising one or two course units, students repeating the module must repeat all course units in their entirety, irrespective of the grades previously obtained. Grades or assessment results obtained during a previous attempt are otherwise not carried over.

☒ In case of accelerated repetition per Art 7 of the R-IBM, grades for continuous assessments are carried over.

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8. Remarks

Further details regarding points 5, 6, 7, 9 & 10 may be specified in a module or course unit syllabus available on the Cyberlearn Moodle page of the module or course unit.

The institution reserves the right to modify the content and organization of the module.

9. Bibliography

10. Faculty

Filename : 3161_ModuleDescr_Data-Analytics_26-27_V2.docx

Faculty responsible for the module:
André Jelcic

Module description validated on
2026-06-30

Module description validated by
Astrid Dauverné