

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	Economics III	2026-2027
Code: 3053	Revision date / Effective date: 2026-06-30 / 2026-09-14	
Equivalent to:	ECTS Credits: 4 Credits	
Level:	Type of course:	
☐ Basic module ☐ Further studies module ☒ Advanced module ☐ Specialised module ☐ Other: ...	☒ Bachelor's ☐ Master's ☐ MAS ☐ DAS ☐ CAS ☐ Other: ...	
	Characteristic:	
	☒ Compulsory module	
Type:	Time schedule:	
☒ Main module ☐ Module linked to main module ☐ Optional or subsidiary module ☐ Other: ...	☒ 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: 30531-Economics of competition; 30532-Applied mathematics

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: to have validated the first-year assessment

4. Skills to be gained / general learning objectives

Economics of competition

The goal is to understand how to measure how much firms gain from anticompetitive behaviors. To achieve this, you will learn:

- How to measure competition
- How to create a counterfactual scenario to measure these gains
- How to theoretically identify the various gains and costs to society

Applied mathematics

At the end of the course, the student will be able to:

- Use mathematics tools to model and solve problems in the fields of economics, management and finance.
- Apply optimization techniques to find the best solution to minimization or maximization problems.
- Perform numerical simulations for management problems.
- Develop multivariate calculus techniques.

5. Teaching and content

Course unit – Economics of competition

- Building a counterfactual scenario.
- Defining a market, measure competition and market power
- Monopoly
- Collusion
- Horizontal and vertical mergers
- History of competition policy

Course unit – Applied mathematics

- Linear programming (graphical methods, use of Excel solver, application to management)
- Multivariate calculus (partial derivatives, optimization, optimization under constraints, quadratic programming)
- Monte-Carlo simulations
- Applications to finance (portfolio, options).
- Selected topics chosen by the instructor.

6. Assessment and validation methods

The module is calculated as follows:

- ☒ 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: 3053_ModuleDescr_Economics-III_26-27_V2.docx

Faculty responsible for the module:

Nicolás Depetris Chauvin

Module description validated on

2026-06-30

Module description validated by

Astrid Dauverné