

- Faculté des sciences économiques
- www.unine.ch/seco

Programming (5AF2029)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en développement international des affaires	Cours: 2 ph	Voir ci-dessous	3
Master en finance	Cours: 2 ph	Voir ci-dessous	3
Master en statistique	Cours: 2 ph	Voir ci-dessous	3
Master of Science en innovation	Cours: 2 ph	Voir ci-dessous	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante

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Contenu

- 1) Introduction to MATLAB (operators, variables, assignment statements).
- 2) Definition and use of the main MATLAB data structures (scalars, vectors, matrices).
- 3) MATLAB Programming (selection statements, loop statements, vectorized code, scripts, functions).
- 4) Advanced MATLAB data structures (cell arrays, structures)
- 5) Plotting techniques (two-dimensional and three-dimensional plots)
- 6) Data Import and Export
- 7) Statistics and Mathematics (built-in statistical functions, matrix representation of equation systems)
- 8) Introduction to Financial Toolbox (portfolio optimisation, risk analysis)

Forme de l'évaluation

2-hour practical evaluation during or after the last lecture of semester.

Re-take exam: 2-hour written exam during session.

During the practical evaluation/re-take exam:

- Only accepted documentation : course slides with annotations
- All personal connected objects (smart-phones, watches, tablets, etc.) are forbidden. In case of violation of this rule, the students are in a situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

During the practical evaluation:

- The use of the provided computers (from university lab) is allowed, and the solutions should be submitted in Moodle before the 2 hour deadline.

During the re-take exam:

- no computer will be provided, the solution should be written on paper.

Documentation

Attaway, Stormy. MATLAB: A practical introduction to programming and problem solving, 5th ed., Elsevier, 2019

Forme de l'enseignement

Lectures: 4 hours per week, 7 weeks.

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Identify the basic concepts of structured programming
- Use basic data structures

URLs	1) https://moodle.unine.ch/course/view.php?id=3844
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- Select appropriate algorithmic approaches to solve problems
- Develop simple solutions for managing data in the context of research applications
- Develop basic programs to manipulate and analyse data
- Justify the steps necessary for solving a problem
- Explain the algorithm solving strategy
- Analyse simple algorithms
- Explore additional documentation for solving a specific problem in an independent manner

Compétences transférables

- Apply knowledge to new situations
- Design projects
- Discuss complex issues