

### Identification of the teaching subject

Title: Elaboration of GIS

Course Category: Fundamental 5

Number of Credits: 6                      Coefficient: 3

Total Weekly Class Hours: 4h30

- Lectures (hours per week): 1.5 h
- Tutorials (hours per week): 3 h
- Practical Work (hours per week): /

### Head of the teaching subject

Family name, First name, Grade : Dr. BOUSSOUF Mouatez Billah - MCA -  
Location of office : /

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Phone (Optionnal) : 0557 65 37 66

Course schedule and course location: Monday 12h – 15:30h BI1

### Description of the teaching subject

**Prerequisites:** Students should have a basic understanding of cartography, scale, and graphic semiotics on one hand, and knowledge of GIS (Geographic Information Systems) concepts and the basics of using the ArcGIS software in S4 (a previous semester).

**General Objective of the Teaching Subject:** Creat a GIS project.

**Learning Objectives :**

- Import and work with a DWG file in ArcGIS.
- Organize and prepare a working method for initiating the project.
- Analyze a land-use plan (POS) or site plan and extract the necessary layers for project implementation.
- Collaborate effectively with the workshop to ensure a shared working experience.

### Evaluation Methods

| Nature of Assessment      | Weighting in % |
|---------------------------|----------------|
| Exam                      | 33             |
| Supervised practical work | 67             |
| <b>Total</b>              | <b>100%</b>    |

### References & Bibliography

- Jean Denègre et François Salgé, Les systèmes d'information géographique 2e édition 2004, éditions PUF, coll. « Que sais-je ? »
- SERRADJ, Aziz (2008) *Cartographie thématique 4. Des transformations renouvelées*. Paris, Hermès, 198 p. (ISBN 978-2-7462-2207-6). *Cahiers de géographie du Québec*, 54 (151), 222–223. <https://doi.org/10.7202/044379ar>
- Jacques Bertin (1967), *Sémiologie graphique. Les diagrammes. Les réseaux. Les cartes*, Paris/La Haye, Mouton ; Paris, Gauthier-Villars.
- Information Resources Management Association (IRMA), (2012), *Geographic Information Systems: Concepts, Methodologies, Tools, and Applications*
- Markus Neteler, Helena Mitasova (2004), "Open Source GIS: A GRASS GIS Approach"
- Maguire, D. J., Goodchild, M. F., & Rhind, D. W. (2005). *Fundamentals of geographic information systems* (3rd ed.). New York: Wiley.
- Tomlinson, R. F. (2013). *Geographic information systems: Principles, techniques, applications* (4th ed.). Hoboken, NJ: Wiley
- Tomlinson, R. F. (2013). *Geographic information systems for business and management* (4th ed.). Hoboken, NJ: Wiley.
- Longley, P. A., Goodchild, M. F., Maguire, D. J., & Rhind, D. W. (2005). *GIS and spatial analysis: An introduction* (3rd ed.). New York: Wiley.
- MacEachren, A. M. (2011). *How maps work: Visualizing geographic information* (3rd ed.). New York: Guilford Press.

### Course Schedule

| Week | Course/Session Title   | Date       |
|------|--|------------|
| 1    | Review of Basic Cartography Concepts (map, plan, scale, data sources, data collection, types of representations).<br>Review of GIS Concepts, Definition of a Project and a GIS Project | 28.09.2023 |
| 2    | Software Installation and Interface Introduction (ArcGIS),   | 05.10.2023 |
| 3    | Georeferencing a Raster Image in ArcGIS<br>Local and International Coordinate Systems  | 12.10.2023 |
| 4    | Alignment and Correction of an AutoCAD Project to Real Coordinates before Exporting to ArcGIS  | 19.10.2023 |
| 5    | Introduction to Software Operation Logic and a Work Organization Model. Presentation of an AutoCAD Workshop Project from S4  | 26.10.2023 |
| 6    | Creation of a Series of Shapefile Type Layers.<br>Selection and Conversion of AutoCAD Layers to ArcGIS 1   | 02.11.2023 |
| 7    | Creation of a Series of Shapefile Type Layers.<br>Selection and Conversion of AutoCAD Layers to ArcGIS 2   | 09.11.2023 |
| 8    | Drawing, Editing, and Correction of Graphic Data 1   | 16.11.2023 |
| 9    | Drawing, Editing, and Correction of Graphic Data 2   | 23.11.2023 |
| 10   | Cartographic Production and Layout 1   | 30.11.2023 |
| 11   | Cartographic Production and Layout 2   | 07.12.2023 |
| 12   | Project Presentation   | 14.12.2023 |
| 13   | Evaluation Exercise  | 21.12.2023 |
|      | <b>End-of-Semester Exam</b>  |            |
|      | <b>Retake Exam</b>   |            |

Date :28.10.2023

Teacher's Signature

