

MINISTRY OF HIGHER EDUCATION AND
SCIENTIFIC RESEARCH
UNIVERSITY OF 8 MAI 1945 GUELMA
*Faculty of Mathematics, Computer
science, and Material Sciences
Department of Computer Science*



وزارة التعليم العالي
والبث العلمي
جامعة 8 ماي 1945 قالمة
كلية الرياضيات، الإعلام
الآلي و علوم المادة
قسم: الإعلام الآلي

Syllabus

(Course Outline)

Course Unit: UEF22 (Fundamental)

Subject: Algorithmics and Data Structures 2

Field/Branch: Mathematics and Computer Sciences

Semester: 2, **Academic Year:** 2023/2024

Credits: 6, **Coefficient:** 4

Total Weekly Hours: 04H30

- Lectures (01H30 per week)
- Tutorials (01H30 per week)
- Practical Work (01H30 per week)

Language of Instruction: English

Course Instructor: Dr. Abderrahmane KEFALI, **Title:** MCA

Office:, Teachers Rooms, Department of Computer Science (E8)

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Course Objectives:

- Introduce the concepts of algorithms and data structures.
- Enable students to acquire fundamental programming concepts.

Recommended Prerequisite Knowledge:

Basic knowledge of algorithms and data structures.

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Course Content:

Chapter 1. Subprograms: Functions and Procedures

- Introduction
- Definitions
- Local and global variables
- Parameter passing
- Recursion

Chapter 2. Files

- Introduction
- Definition
- Types of files
- File manipulation

Chapter 3. Linked Lists

- Introduction
- Pointers
- Dynamic memory allocation
- Linked lists
- Operations on linked lists
- Doubly Linked Lists
- Special Linked Lists
 - Stacks
 - Queues

Assessment Method: Knowledge Assessment & Weightings

Assessment Method	Weight (%)
Final examen	60%
Tutorial works	20%
Practical works	20%
Total	100%

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Bibliography:

- Thomas H. Cormen, Algorithmes Notions de base *Collection : Sciences Sup, Dunod*, 2013.
- Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest *Algorithmique - 3ème édition - Cours avec 957 exercices et 158 problèmes Broché, Dunod*, 2010.
- Rémy Malgouyres, Rita Zrour et Fabien Feschet. *Initiation à l'algorithmique et à la programmation en C : cours avec 129 exercices corrigés*. 2ième Edition. Dunod, Paris, 2011. ISBN : 978-2-10-055703-5.
- Damien Berthet et Vincent Labatut. *Algorithmique & programmation en langage C - vol.1 : Supports de cours*. Licence. Algorithmique et Programmation, Istanbul, Turquie. 2014, pp.232.
- Damien Berthet et Vincent Labatut. *Algorithmique & programmation en langage C - vol.2 : Sujets de travaux pratiques*. Licence. Algorithmique et Programmation, Istanbul, Turquie. 2014, pp.258. <cel- 01176120>
- Damien Berthet et Vincent Labatut. *Algorithmique & programmation en langage C - vol.3 : Corrigés de travaux pratiques*. Licence. Algorithmique et Programmation, Istanbul, Turquie. 2014, pp.217. <cel-01176121>
- Claude Delannoy. *Apprendre à programmer en Turbo C*. Chihab- EYROLLES, 1994.

Date & Signature

07/02/2024