الجمـــهورية الجزائريـــة الديمقراطيـــة الشعبيـــة
PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH

UNIVERSITY 8 Mai 1945
GUELMA
Faculty of Mathematics,
Computer Science and Sciences
of Matter

Computer Science Department

وزارة التعليم العالـي
و البحث العلمـي

جامعـة 8 مـــاي1945
قالمـــة
كليـة الرياضيـات، الإعـلام الآلـي
و علـوم المـادة
قسم: الإعلام الآلي

SYLLABUS

Domain/Field: Computer science/1st-year engineer **Course:** Machine Structure

Academic year: 2024/2025 **Semester:** 1

Credit: 06 **Coefficient:** 04

Hours per week: 4.5 Hours

- **Lectures:** 3 Hours
- **Tutorial work:** 1.5 Hour

Teacher responsible for the course: Prof. Dr. Lafifi Yacine

Assistant teachers:

- Mr Gouasmi Noureddine
- Dr. Boudria Asma

Office: E8.3 **E-mail** : lafifiencadrement@gmail.com or lafifi.yacine@univ-guelma.dz

Course objectives:

This course aims to provide the students with a detailed description of the main components of computers and their functioning. To begin, the computer's general and overall structure is presented so that students can understand the logical sequence of the course chapters. The content of the different chapters allows students to acquire knowledge, allowing them to:

- Know the representation of numbers in the machine;
- Be familiar with the main components of a computer;
- Distinguish the methods for synthesizing combinatorial and sequential logic systems;
- Acquire low-level programming knowledge (some basic assembly language instructions).

Tutorial work (TW) allows students to fully understand the concepts covered during the theoretical sessions by solving exercises at the end of each chapter.

Content of the Course:

Part I: BASIC ELEMENTS

Chapter 1: General Introduction

Chapter 2: Number systems

Chapter 3: Representation of information

Chapter 4: Binary Boolean Algebra

Part II: COMBINATIONAL AND SEQUENTIAL LOGIC

Chapter 5: Combinational Logic

Chapter 6: Sequential Logic

Part III: COMPUTER OVERVIEW

Chapter 7: Memories

Part IV: STUDY OF A PEDAGOGICAL MACHINE

Chapter 8: The pedagogical machine (The MIASM machine)

Knowledge Assessment:

Evaluation type	**% of the final mark**
Final Exam	**60%**
Continuous Control (attendance/participation)	**40%**

References: (In French, available at the faculty library)

- Andrew Tanenbaum, **Architecture de l'ordinateur**, Pearson education, 2005
- Paollo Zanella, Yves Ligier, Emmanuel Lazard, **Architecture et technologie des ordinateurs**, 6ème édition, Dunod, 2018
- Jacqus Schwarz Jean, **Architecture Des Ordinateurs**, Osman Eyrolles Multimedia, 2005.
- Robert Strandh, Irène Durand, **Architecture de l'ordinateur**, Dunod, 2011.