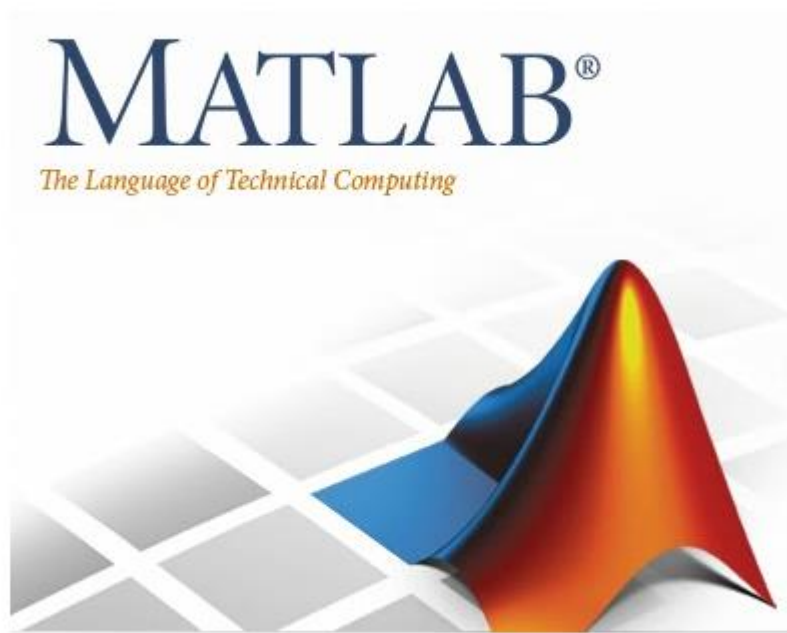

COURSE PLAN

INFORMATICS PRACTICAL WORK



MAY 29, 2023

SALAH DJEROUNI

s.djerouni@univ-biskra.dz

Table of contents



I - Course information :	03
II – Course presentation :	04
III – Content :	05
IV - Learning objectives :	05
V - Learning evaluation methods :	06
VI - Teaching / learning activities :	06
VII - Modalities of functioning :	06
VIII - Assistance resources :	06

I - Course information:

Faculty : Science and Technology

Department : Civil Engineering and Hydraulics

Public cible : 2nd year Civil Engineering

Course title : Informatics Practical Work

Credit : 02

Coefficient : 01

Duration : 15 weeks

Schedule : Monday 08h00-11h20

Teacher : Dr. Salah DJEROUNI

Email contact : s.djerouni@univ-biskra.dz

II – Course presentation:

The main benefit of taken this kind of courses is to **generate** such kind of student that capable to **create** as well as **reproduce** suitable programs and correct based on the requirement **using** easily accessible MATLAB software version 2010.

This **selected** course will be a helpful tool for the realization of the practical work of the numerical method in 2nd semester mainly. Also, can be employ to demonstrate and/or compute some result of other courses.

The main motivation of **chosen** MATLAB **compared** with available programming languages is that MATLAB software **collect** and/or **develop** several ready functions that enable the student or whatever to **solve** various mathematical problems. Taken an example, find roots of algebraic equations whatever the order, curve fitting problems, compute several matrices operations whatever the dimensions of the matrices.

III – Content :

This course is divided into eight chapters. Chapter 1: we first familiarize the learners with some basic elements (i.e., assignment operator) of the MATLAB platform. This allows the learners to shortly learn to do computations in the command window. This is followed by discussing some MATLAB features commands and trigonometric and other useful special functions.

Chapter 2: Vectors in MATLAB

Chapter 3: Matrix in MATLAB

Chapter 4: Polynomials in MATLAB

Chapter 5: MATALB's functions

Chapter 6: Plotting and graphics in MATALB

Chapter 7: For-end loops and while-end loops

And chapter 8: If-else-end condition

IV - Learning objectives :

- ✚ Be able to save and restore MATLAB software workspace variables.
- ✚ Be able to write and creates functions and programs for solving engineering and mathematical problems.
- ✚ Be able to adapting the process how to run and execute function and script in MATLAB, or how to modify them and re-run.
- ✚ Be able to show figure or multiple figures that contain multiple plots.

V - Learning evaluation methods:

The final evaluation is carried out through :

- (a) A final homework assignment (written, of course) covering everything you've seen in this Informatics Practical Works during the semester, and counts for 50% of the final grade.
- (b) Continuous and regular evaluation, with the remaining **50%** allowing you to earn points throughout the semester, in a variety of ways:

Informatics Practical Works participation grade, participation scored out of **10%**.

Two micro-interrogation using or by laptop scored out of **30%**

And for participation throughout the semester scored out of **10%**

So, it's: the sum of these notes.

VI - Teaching / learning activities :

The Informatics Practical Works offers several methods with their own specific features and advantages:

Students and/or learners take a part in debates, initiated by questions posed on the Informatics Practical Works sequence, without any form of evaluation, with the aim of developing exchanges between students, I let the students participate freely in these debates, proposing answers to the questions so as to mobilize their knowledge, compare their points of view and derive pedagogical benefits from these exchanges.

VII - Modalities of functioning :

The course is organized into: in practical work sessions to mobilize the knowledge acquired in design.

VIII - Assistance resources :

Kattan, Peter Issa. *Matlab for Beginners: A gentle approach*. Petra books, 2008.

Etter, Delores M., David C. Kuncicky, and Douglas W. Hull. *Introduction to MATLAB*. Vol. 4. Hoboken, NJ, USA: Prentice Hall, 2002.

Attaway, Stormy. *Matlab: a practical introduction to programming and problem solving*. Butterworth-Heinemann, 2013.

Driscoll, Tobin A. *Learning Matlab*. Society for Industrial and Applied Mathematics, 2009.

Butt, Rizwan. *Introduction to numerical analysis using MATLAB*. Laxmi Publications, Ltd., 2008.

Sigmon, Kermit. *Matlab: aide-mémoire*. Springer Science & Business Media, 1999.

Chapman, Stephen J. *Essentials of MATLAB programming*. Cengage Learning, 2016.