COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad
2. University Department/Centre	College of Engineering / Energy Engineering
3. Course title/code	104ENPP
4. Programme(s) to which it contributes	BSc.
5. Modes of Attendance offered	weekly
6. Semester/Year	year
7. Number of hours tuition (total)	60 hour
8. Date of production/revision of this specification	25/ 2/ 2015
9. Aims of the Course	
1- Cognitive development of students by recognizing the MATLAB software environment.	
2- Engineering skills development for students to learn how to deal with matrices.	
3- Recognize the important programs and functions in MATLAB program through various engineering applications.	
4- Dealing with drawing functions bi-dimensional and three-dimensional through the identification of the suggestions drawing.	
5- Learn how to use programming and conditional sentences to build the program (code) by MATLAB language.	
6- Dealing with polynomial functions and how to use them and drawn and their derivations.	
7- Solving of engineering practical examples for various engineering fields.	

10· Learning Outcomes, Teaching ,Learning and Assessment Methods

A- Knowledge and Understanding

A1. The student learns the basic MATLAB commands and the environment.
A2. That recognizes the student on how to deal with (Vector matrices) and how to configure the program in MATLAB language.
A3. The student learns how to solve the problems of Applied Engineering.
A4.
A5.
A6.

B. Subject-specific skills

B1. Solve fundamental problems of engineering.
B2. Using MATLAB program to solve problems of Applied Engineering.
B3.

Teaching and Learning Methods

The method of lecturing.
Team Project.
Laboratory learning.
Application of engineering problems.
The method of discussion and weekly assignments.

Assessment methods

Daily and monthly tests, also the practical and theoretical tests.

C. Thinking Skills

C1. Inference.
C2. Solve the problems.
C3. Learn the basic commands of the program.
C4.

Teaching and Learning Methods

The lecture / discussion / solve Applied Engineering problems / learning laboratory.

Assessment methods

Daily and monthly tests, also the practical and theoretical tests.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Giving students the skill and knowledge engineering process for programming.
D2. Solving engineering problems in a scientific way by the students.
D3.
D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 Hours	Recognize that the general idea of the MATLAB environment	MATLAB basic commands and environment	The lecture and discussion	A theoretical and practical tests
2	2 Hours	That recognize how to deal with the environment MATLAB	Basic concepts for MATLAB environment	The lecture and discussion	A theoretical and practical tests
3	2 Hours	Identify the basic commands and how to use it	How to deal with various mathematical functions	The lecture and discussion	A theoretical and practical tests
4	2 Hours	Calculations in MATLAB	operations of Addition, subtraction, multiplication and division	The lecture and discussion	A theoretical and practical tests
5	2 Hours	Order of Precedencey	The sequence of calculation operations	The lecture and discussion	A theoretical and practical tests
6	2 Hours	How to create Vector	Identify the row and column vectors	The lecture and discussion	A theoretical and practical tests
7	2 Hours	Add and delete elements (to / from) Vector	Changing the size of the vector through special orders	The lecture and discussion	A theoretical and practical tests
8	2 Hours	How to append vectors and presentation of a row or column	Commands of vectors appending	The lecture and discussion	A theoretical and practical tests
9	2 Hours	How to create arrays	Create of matrices in MATLAB	The lecture and discussion	A theoretical and practical tests
10	2 Hours	identify the types of matrices	create of square and rectangular matrices	The lecture and discussion	A theoretical and practical tests
11	2 Hours	Special matrices in MATLAB	specifications of special Matrices and how deal with it	The lecture and discussion	A theoretical and practical tests
12	2 Hours	Resize of arrays	Add and delete some rows and columns	The lecture and discussion	A theoretical and practical tests

13	2 Hours	Manipulation of matrices	Some elements of the switch matrices with elements from other matrices	The lecture and discussion	A theoretical and practical tests
14	2 Hours	Calculations on arrays	Addition, subtraction, multiplication and division of matrices	The lecture and discussion	A theoretical and practical tests
15	2 Hours	Solving systems of equations by matrices	Applied engineering problems	The lecture and discussion	A theoretical and practical tests
16	2 Hours	Element by element method for Solution calculations	Element by element operation of Addition, subtraction, multiplication and division	The lecture and discussion	A theoretical and practical tests
17	2 Hours	Operations on MATLAB memory	Add the elements, deleted, or changed in the MATLAB memory	The lecture and discussion	A theoretical and practical tests
18	2 Hours	Script files	Identify the script file	The lecture and discussion	A theoretical and practical tests
19	2 Hours	Input special orders of Script files	iidentify the specific commands	The lecture and discussion	A theoretical and practical tests
20	2 Hours	Output methods and special orders of Script file	Identify the specific commands	The lecture and discussion	A theoretical and practical tests
21	2 Hours	two-dimensional plot	Plot methods and special orders	The lecture and discussion	A theoretical and practical tests
22	2 Hours	Plot of multiple curves on the same figure	plot methods of multiple curves on the same figure	The lecture and discussion	A theoretical and practical tests
23	2 Hours	Plot of different curves on the same window	Plot Methods of multiple curves on the same window	The lecture and discussion	A theoretical and practical tests
24	2 Hours	Dealing with polar curves	How to draw polar curves and orders its own	The lecture and discussion	A theoretical and practical tests
25	2 Hours	The basics of three-dimensional plot	methods and orders of three-dimensional plot	The lecture and discussion	A theoretical and practical tests

26	2 Hours	Polynomial functions	How to handle Polynomial functions and orders its own	The lecture and discussion	A theoretical and practical tests
27	2 Hours	Mathematical operations of polynomial functions	operation of Addition, subtraction, multiplication and division	The lecture and discussion	A theoretical and practical tests
28	2 Hours	Programming in MATLAB	How to build a program in a MATLAB language	The lecture and discussion	A theoretical and practical tests
29	2 Hours	iteration methods	identify of program structure	The lecture and discussion	A theoretical and practical tests
30	2 Hours	conditional statements in MATLAB	Identify the types of in MATLAB	The lecture and discussion	A theoretical and practical tests

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	MATLAB an introduction with applications. In addition, others references from an internet.
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	
Minimum number of students	10
Maximum number of students	30