



**Department of Physics**

**College of Education**

**University of Salahaddin**

**Subject: Programming (MATLAB)**

**Course Book: PhD**

**Lecturer's name:**

**Dr Haidar J. Ismail**

**Academic Year: 2023-2024**

## Course Book

<b>1. Course name</b>	<b>Programming (MATLAB)</b>
<b>2. Lecturer in charge</b>	<b>Dr Haidar J. Ismail</b>
<b>3. Department/ College</b>	<b>Physics/ Education</b>
<b>4. Contact</b>	<b>e-mail: <a href="mailto:haidar.ismail@su.edu.krd">haidar.ismail@su.edu.krd</a></b>
<b>5. Time (in hours) per week</b>	<b>Theory: 3 hrs./week</b>
<b>6. Office hours</b>	<b>Monday: 8:30-11:30 Am.</b>
<b>7. Course code</b>	
<b>8. Teacher's academic profile</b>	In 1994, I graduated from the Education Coll./Physics dept. and got the MSc in the same university and department in 2003. My Ph.D. was from Pharmacology & Biophysics dept./ Medicine Coll./Hawler Medical University in 2012. I taught at nearly all labs., of the physics department. I have lectured on advanced electricity and magnetism, medical imaging, image processing, Fluid dynamics, thermodynamics, and programming (MATLAB).
<b>9. Keywords</b>	
<b>10. Course overview:</b>	The importance of programming is as a main tool that assists students/researchers to solve and understand different theoretical problems in their college lives and beyond. MATLAB has large applications in different fields of physics and other sciences and is capable of making newer programs for other problems. So, the MATLAB package is used to teach programming as used in other universities.
<b>11. Course objective:</b>	This course is aimed at learning programming skills using MATLAB which is the most famous and applicable language in different fields of science. It covers, in general, mathematical and physical implementation and is appropriate for students/researchers working on scientific projects.
<b>12. Student's obligation</b>	In the hall, the lecture will be illustrated through ordinary methods (PPT, white and blackboards, and MATLAB software), to prepare them for monthly examinations. Here students will be prepared for quizzes and examinations that will be done every week.
<b>13. Forms of teaching</b>	Lectures will be through using ppt slides that are displayed on data-show, and black and white boards.
<b>14. Assessment scheme</b>	The final degree will form from:

1. Mid. Exam.      2. Project      3. The Weekly Quiz      4. H.W.		
<b>15. Student learning outcome:</b> <b>After successful completion of the courses, the students learn:</b>		
<ul style="list-style-type: none"> <li>➤ Knowledge of Programming (MATLAB).</li> <li>➤ Understanding of main topics in MATLAB</li> <li>➤ Obtaining general skills in programming that assist them in solving physics problems.</li> <li>➤ Assist students in making curves and calculations (slope, intersection, formulas) of their reports/research.</li> </ul>		
<b>16. Course Reading List and References:</b>		
<ul style="list-style-type: none"> <li>➤ Basics of MATLAB and Beyond, By Andrew Knight, CRC Press, USA, 1st Edition, 2000.</li> <li>➤ MATLAB Demystified, By David McMahon, McGraw-Hill Companies, USA, 1st Edition, 2007.</li> <li>➤ Different Internet sources.</li> </ul>		
<b>17. The Topics:</b>		<b>Lecturer's name</b>
Chapter One: Introduction/MATLAB windows	1 weeks	Dr. Haidar J. Ismail
Chapter Two: Algebraic and Symbolic Computation	2 weeks	
Chapter Three: Vectors, matrix, functions	2 weeks	
Chapter Four: Solving Equations and Graphics	2 weeks	
Chapter Five: loops, branches, logical	4 weeks	
Chapter Six: Simulink	1 weeks	
Chapter Seven: GUIs	2 weeks	
<b>18. Practical Topics (If there is any)</b>		
Same topics as in theories.		Dr. Haidar J. Ismail
<b>19. Examinations:</b>		
1. Compositional      2. True or false type of exams      3. Multiple choices		
<b>20. Extra notes:</b>		
<b>21. Peer review</b>		پیداچوونہوہی ہاوہل