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**Department of Physics**

**College of Education**

**University of Salahaddin**

**Subject: Programming (MATLAB)**

**Course Book: Year 2**

**Lecturer's name Dr. Haidar J. Ismail**

**Academic Year: 2022-2023**

**Course Book**

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| **1. Course name** | **Programming (MATLAB)** |
| **2. Lecturer in charge** | **Dr Haidar J. Ismail** |
| **3. Department/ College** | **Physics/ Education** |
| **4. Contact** | **e-mail:** **haidar.ismail@su.edu.krd** |
| **5. Time (in hours) per week**  | **Theory: 2 hrs. Practical: 4x2 hrs. (10 hours/weak)**  |
| **6. Office hours** | Tuesday: 8:30-11:30 Am. |
| **7. Course code** |  |
| **8. Teacher's academic profile**  |  In 1994, I graduated from Education coll./Physics dept. and got 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 dynamic, thermodynamics, and Programing (MATLAB).  |
| **9. Keywords** |  |
| **10. Course overview:**  The importance of programming is as a main tool that assists students to solve and understand different theoretical problems in their college lives and beyond. MATLAB gave large applications in different fields of physics and other sciences and is capable to make newer programs for other problems. So, the MATLAB package is used to teach programming as used in other universities. |
| **11. Course objective:** This course is aimed to learn programming skills using MATLAB which is the most famous and applicable language in different fields of Scientific. It covers, in general, mathematical and physical implementation and is appropriate for students' work on scientific projects. |
| **12. Student's obligation** In the hall, the lecture will be illustrated through ordinary methods (ppt, white and blackboards, and MATLAB software), to prepare them for monthly examinations.  In the lab., the lectures will be repeated and illustrated through practical examples that will be applied by the lecturers and repeated by students on their Desktop computers or laptops of students to try to solve problems in their homes. Here students will be prepared for quizzes and examinations that will be done every four/to five weeks.  |
| **13. Forms of teaching** Lectures will be through using ppt slides that display on data-show, and black and white boards. |
| **14. Assessment scheme**Theory: final degree will form from: 1. Two examinations 2. Absence of students.Practice: final degree depends on: 1. Examine every four weeks. 2. The Weekly quiz  3. Absences 4. MATLAB Notebook. ‌‌ |
| **15. Student learning outcome:****After successful completion of the courses, the students learn:*** Knowledge of Programming (MATLAB).
* Understanding of main topics in MATLAB
* Obtaining general skills in programming that assist them in solving physics problems.
* Assist students to make curves and calculations (slope, intersection, formulas) of their reports in different Labs.
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| **16. Course Reading List and References‌:*** Basic of MATLAB and Beyond, By Andrew knight, CRC press, USA, 1st Edition, 2000.
* MATLAB Demystified, By David McMahon, McGraw-Hill Companies, USA, 1st Edition, 2007.
* Different Internet sources.
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| **17. The Topics:** | **Lecturer's name** |
| Chapter One: MATLAB BasicsChapter Two: Interacting with MATLABChapter Three: Beyond the BasicsChapter Four: Simulink (may be according to available time)Chapter Five: GUIs (may be according to available time) | Dr. Haidar J. Ismail (1 hr./weeks) |
| **18. Practical Topics (If there is any)** |  |
| Same topics as in theories.  | Dr. Haidar J. Ismail (2 hr./weeks) |
| **19. Examinations:*****1.*** Compositional 2. True or false type of exams 3. Multiple choices |
| **20. Extra notes:** There are too many unnecessary holidays that reduce topics given to students.  |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**  |