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| **Department of Mechanical Mechatronics Engineering** | |
| **Computer Applications of Mechanical Engineering (67300)** | |
| **Total Credits** | **1** |
| **major compulsory** | |
| **Prerequisites** | P1 : Computer Programming (66111) |
| **Course Contents** | |
| This course introduces the most popular used software (MAT LAB) for matrix operations, and solution of linear equations. Programming methods in MATLAB software (m-files) and the software library of m-defined functions. Graphical representation of data structures and analysis of Mechanical systems. | |
| |  |  |  |  | | --- | --- | --- | --- | | **Intended Learning Outcomes (ILO's)** | | **Student Outcomes  (SO's)** | **Contribution** | | 1 | Use basic Matlab variables, functions, commands and operators | K | 30 % | | 2 | Create Matlab functions | K | 15 % | | 3 | Create Branching statements: if statement, switch statement …etc. And program Matlab loops | K | 55 % | | |
| **Textbook and/ or Refrences** | |
| Matlab Programming for Engineers, 4th Ed. Chapman S. J. | |
| |  |  | | --- | --- | | **Assessment Criteria** | **Percent (%)** | | First Exam | 20 % | | Second Exam | 20 % | | Quizzes | 20 % | | Final Exam | 40 % | | |
| **Course Plan** | |
| |  |  | | --- | --- | | **Week** | **Topic** | | 1 & 2 | Introduction to Matlab | | 2, 3, 4 & 5 | Matlab basics: variables, workspace, figures, principle commands … etc. | | 6 & 7 | Built-in functions and Matlab help | | 8 | MIDTERM EXAM 1 | | 8, 9, & 10 | Branching statements (if, switch-case, while…) | | 11, 12 & 13 | Loops | | 13 | MIDTERM EXAM 2 | | 14 & 15 | User defined functions. | | 16 | Animated figures | | 16 | Final Exam | | |