

1. MME 1205 Graphic and Design Fundamentals
2. 2 Credit Hours and 3 contact hours per week.
3. *Assistant Prof. Binata Joddar*
4. Basics of MATLAB and Beyond by Andrew Knight, 1st Edition, ISBN 9780429186882
5. Specific course information
  - a. The course provides an overview of important and novel processing methods used for the manufacture of advanced structural and functional semi-finished components, including the metals, polymers, ceramics, and their composites.
  - a. Prerequisites or co-requisites: CHEM1305 General Chemistry
  - b. Required
6. Specific goals for the course
  - a. Learning Outcomes:
    - Apply computational analysis tools such as Excel and MATLAB to fundamental concepts in materials science. (Exam I and II)
    - Design a 3D crystal structure or mesh using MATLAB. (Exam II)
    - Apply statistical analysis concepts to materials characterization and property analysis using SPSS (statistical software package). (Exam III)
    - Apply design concepts from Solidworks to model various structures in laboratory assignments (Lab assignments)
  - b. Student Outcomes:
    - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science and mathematics
    - An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
    - An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.
    - An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
7. Brief list of topics to be covered  
Problem solving utilizing
  - a. Matlab
  - b. Excel
  - c. Statistical Analysis (SPSS)
  - d. Solidworks