1. MME 1205 Graphic and Design Fundamentals

2. 2 Credit Hours and 3 contact hours per week.

3. Assistant Prof. Binata Joddar


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