1. BMEN 4222 - Senior Design II

2. 3 Credits, and 4.5 Contact Hours

3. Instructors: Dr. Venkat Keshav Chivukula
   Dr. Xiaodan Shi

4. Textbook: None

5. Specific course information
   a. Course catalog description: Continuation of BMEN 4212. Team biomedical engineering design project involving development of alternative approaches for solution, implementation of design techniques and error analysis.

   b. Prerequisites or co-requisites: Pre-requisite (s:) BMEN 4212

   c. Required

6. Specific goals for the course:
   a. Specific outcomes of instruction: Upon successful completion of this course, students will understand: Develop a product or process portfolio with a marketing plan. Develop an understanding of the product development cycle from inception to a test model as used in an industrial setting. Develop an appreciation of a team effort in product development. Prepare a formal technical document covering the actual design. Learn the process of utilizing catalogs, specification sheets and vendor documents in the design process. Learn to apply the breadth of the major engineering technology courses to the completion of the final design. Develop an appreciation for the requirements and techniques of an oral presentation covering a group effort. Develop an appreciation for the free market system

   b. ABET Outcomes 1, 2, 3, 5.

   an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
   an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
an ability to communicate effectively with a range of audiences;
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;

7. Brief list of topics to be covered:
   • Engineering design project involving development of alternative approaches 
     for solution
   • Implementation of design techniques and error analysis