Bachelor of Science in Mechanical Engineering

Program Objectives
Mechanical engineers are concerned with the design, manufacture, operation and eventual decommissioning of mechanical and thermal systems. These systems may vary from combustion engines to automated manufacturing systems to computer vision systems for biomedical applications. The mechanical engineering graduate is prepared to work in many areas, including air-conditioning and refrigeration, automotives, manufacturing, welding, robotics, and R&D environments.

Mechanical Engineering Undergraduate Program Educational Objectives
The graduates from Mechanical Engineering program are expected to demonstrate within three to five years of graduation

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- The professional skills that enable a successful career
- The ability to apply their broad education necessary to ethically practice engineering in a global and societal context

These objectives are met through a curriculum that provides a strong foundation in the basic and applied sciences and in the liberal arts, with increasing emphasis on mechanical engineering topics in the junior and senior years. The curriculum also includes a wide variety of technical electives and a series of engineering laboratory courses to supplement the theory presented in lecture. Liberal arts courses give the mechanical engineering student a well-balanced education. A capstone senior design experience gives the student opportunities to apply and integrate knowledge and skills learned throughout the mechanical engineering curriculum.

Abilities of Our Graduates
The program's success at meeting its objectives is measured by our graduate's abilities in several key areas. These abilities or "supporting outcomes" for each objective are as follows.

Objective 1: To educate the student to apply mathematics, science, and engineering principles to solve mechanical engineering problems.

Supporting Outcomes:

1.1. The graduates shall have the ability to analyze, design, and realize mechanical and thermal systems.
1.2. The graduates shall have the ability to use contemporary computation techniques and tools.
1.3. The graduate shall have competence in design of experiments, experimental practices and data interpretation.
1.4. The graduates shall have the ability to apply mathematics through linear algebra, multivariate calculus and differential equations.
1.5. The graduate shall have the ability to apply statistical methods to analyze and interpret data.
1.6. The graduates shall have an understanding of the chemistry and physics that are fundamental to mechanical engineering.
Objective 2: To develop the student's professional skills that enable a successful career.

Supporting Outcomes:

2.1. The graduates shall have the ability to perform engineering economic analyses.
2.2. The graduates shall have the ability to plan, schedule, and execute engineering projects.
2.3. The graduates shall have effective oral and written communication skills.
2.4. The graduates shall have an understanding of professional and ethical responsibility.
2.5. The graduates shall have the ability to function on multi-disciplinary teams.
2.6. The graduates shall have an understanding of and the ability to engage in life-long learning.

Objective 3: To provide the student with the broad education necessary to practice engineering in a global and societal context.

Supporting Outcomes:

3.1. The graduates shall have an appreciation for the role of engineering in modern society.
3.2. The graduates shall have an appreciation for literature, fine arts, and humanities.
3.3. The graduates shall have in one foreign language the ability to comprehend the topic and main ideas on familiar subjects.