Civil Engineering Department

Key Performance Indicators of the Student Outcomes

Student Outcome 1

An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

The Key Performance Indicators of the Student Outcome 1 are:

1.1 Identify complex engineering problems.
1.2 Formulate complex engineering problems by applying principles of engineering, science, and mathematics.
1.3 Solve complex engineering problems by applying principles of engineering, science, and mathematics.

Student Outcome 2

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.

The Key Performance Indicators of the Student Outcome 2 are:

2.1 Follow a design strategy with a logical and orderly design procedure to meet specifications.
2.2 Identify alternative solutions to a problem as a result of the analysis of the system, component or process designed.
2.3 Develop a solution considering socio-economical, safety and environmental constraints.
2.4 Provide a feasible design, considering cost and manufacturability.

Student Outcome 3

An ability to communicate effectively with a range of audiences.

The Key Performance Indicators of the Student Outcome 3 are:

3.1 Communicate effectively through writing abilities.
3.2 Communicate effectively through speaking abilities.
3.3 Communicate effectively through graphic or drawing abilities.
3.4 Communicate effectively to a wide range of audiences.

Student Outcome 4

An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

The Key Performance Indicators of the Student Outcome 4 are:

4.1 Identify the global, economic, environmental, and societal context of an engineering situation.
4.2 Describe ethical and professional responsibilities related to an engineering project.
4.3 Explain the impact of engineering decisions in a global, economic, environmental, and societal context.

Student Outcome 5

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.

The Key Performance Indicators of the Student Outcome 5 are:

5.1 Demonstrate capacity for teamwork and leadership.
5.2 Function in a team characterized by a collaborative and inclusive environment.
5.3 Formulate and execute a work plan with objectives and goals.

Student Outcome 6

An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

The Key Performance Indicators of the Student Outcome 6 are:

6.1 Design an Experiment Plan (How to answer the Driving Question?).
6.2 Acquire data on appropriate variables.
6.3 Interpret experimental data and results with respect to appropriate theoretical models.
6.4 Explain observed differences between model and experiment (bad model, bad measurements, noise, etc.) and draw conclusions.

Student Outcome 7

An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The Key Performance Indicators of the Student Outcome 7 are:

7.1 Identify necessary techniques, skills, and tools for a new situation (research).
7.2 Explain the use of the new techniques, skills, and tools (acquisition).
7.3 Apply the new techniques, skills, and tools to the given situation.

Student Outcome 8

An ability to manage human, material, and financial resources.

The Key Performance Indicators of the Student Outcome 8 are:

8.1 Manage financial resources.
8.2 Manage human resources.
8.3 Manage material resources.