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|  | **BAHRIA UNIVERSITY, (Karachi Campus)**  *Department of Software Engineering*  **Assignment 1 - Spring 2022** |  |



COURSE TITLE: Engineering Management COURSE CODE: **MGT-423**

Class: **BSE-IV (B)** Shift: **Morning**

Course Instructor: **Engr. Talha Bin Saeed** Time Allowed:  **4 Weeks**

Submission Date: **25/05/2022** Max. Marks:05

**[CLO1: 5 Marks]**

**QUESTION #01**

Select an engineering problem from an organization of your choice and apply the 5-step engineering problem solving approach in detail for the problem to be solved. Also comment on the simplicity of the steps involved in the problem-solving approach.

Engineers design, produce, and maintain a diverse range of complex systems and structures, from buildings to software. While there are many different engineering careers, there is one common engineering attitude: creativity. To do so, they must think in more cross-disciplinary ways.

**Engineering problem-solving approach.**  
The following steps are included in the engineering problem-solving approach:

1. Define the problem
2. Collect and analyze the data
3. Search for solutions
4. Evaluate alternatives
5. Select solution and evaluate the impact

**Example**

Engineers design, build, and maintain the physical infrastructure of our civilization. Roads, dams, buildings, airports, bridges, tunnels, water, and sewage systems are all examples of infrastructure**.**

**Define the problem**

Engineers must first decide what they will design, how they will construct infrastructure like roads, dams, and buildings, and what materials they will use. It is simpler to address an issue that is adequately articulated, and additional phases may be completed more quickly.

**Collect and analyze the data**

Do a Comprehensive Analysis: Any building, dam, or other structure requires detailed information as well as a thorough examination of the construction components. Before you start creating, you need look into a few factors.

* Orientation.
* Drainage of stormwater
* Access to a cool wind
* The type of dirt.
* Bushfires

**Search for solutions**

The third step is to discover solutions, which includes all the criteria for developing a building's structure. Examine the building's architect, choose a suitable design, evaluate everything linked to the growth of the building, and manage it appropriately.

**Evaluate alternatives**

Managing the planning and design stages of a building, prepare work schedules, cost estimates, and

ensure that the project is executed on time and within budget. Keep information about everything

through proper documentation and giving updates to senior managers and clients.

**Select solution and evaluate the impact**

Choose the best answer from the various possibilities available, implement it, and compare it to other options.

Examine the designs and timetables before implementing the method.