

## **PROGRAMME OUTCOMES (PO)**

In order to meet the obligations stated in the University and Faculty mission and vision statement, twelve Programme Outcomes (POs) are used. These Programme Outcomes are the specific skills and knowledge that our students are expected to have obtained at the time of their graduation from the programme as stipulated by the Engineering Accreditation Council (EAC), the delegated body by the Board of Engineers Malaysia (BEM) as the only recognized accrediting body for engineering degree programmes offered in Malaysia. Students graduating from the Civil Engineering Programme at Faculty of Engineering will be expected and prepared to exercise the skills and abilities listed below:

### **PO 1: Engineering Knowledge**

Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

### **PO 2: Problem Analysis**

Identify, formulate, conduct research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

### **PO 3: Design/Development of Solution**

Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

### **PO 4: Investigation**

Conduct investigation of complex engineering problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

### **PO 5: Modern Tool Usage**

Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering problems, with an understanding of the limitations.

**PO 6: The Engineer and Society**

Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.

**PO 7: Environment and Sustainability**

Understand and evaluate the sustainability and impact of professional engineering work in the solutions of complex engineering problems in societal and environmental contexts.

**PO 8: Ethics**

Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

**PO 9: Individual and Team Work**

Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

**PO 10: Communication**

Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO 11: Project Management and Finance**

Demonstrate knowledge and understanding of engineering management principles and economic decision making and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO 12: Life Long Learning**

Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.