

**DEPARTMENT OF CIVIL ENGINEERING**

**AHMADU BELLO UNIVERSITY, ZARIA**

**COREN Programme Outcome (POs)**

| <b>Programme Outcome</b>                    | <b>Programme Outcome abilities</b>  |
|---|---|
| <b>PO1:</b> Engineering Knowledge           | Ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of developmental and complex engineering problems  |
| <b>PO2:</b> Problem Analysis                | Ability to identify, formulate, research literature and analyse developmental and complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences                                    |
| <b>PO3:</b> Design/Development of Solutions | Ability to proffer solutions for developmental or 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 |
| <b>PO4:</b> Investigation                   | Ability to conduct investigation into developmental or complex 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           |
| <b>PO5:</b> Modern Tool Usage               | Ability to create, select and apply appropriate techniques, resources and modern engineering and ICT tools, including prediction, modelling and optimization to developmental and complex engineering activities, with an understanding of the limitations            |
| <b>PO6:</b> The Engineer and Society        | Ability to apply reasoning informed by contextual knowledge including Humanities and Social Sciences to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice                  |
| <b>PO7:</b> Environment and Sustainability  | Ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development   |
| <b>PO8:</b> Ethics                          | Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, including adherence to the COREN Engineers' Codes of Conduct  |
| <b>PO9:</b> Individual and Team work        | Ability to function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings   |
| <b>PO10:</b> Communication                  | Ability to communicate effectively on developmental or complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective  |

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|---------------------------------|---|
|                                 | reports and design documentation, make effective presentations, and give and receive clear instructions   |
| <b>PO11:</b> Project Management | Ability to demonstrate knowledge and understanding of engineering, management and financial principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments |
| <b>PO12:</b> Lifelong Learning  | Ability to recognize the need for, and have the preparations and ability to engage in independent and lifelong learning in the broadest context of technological and social changes   |

### **Civil Engineering Programme Educational Objectives (PEOs)**

The PEOs developed for the Civil Engineering programme are **broad, long-term goals** describing what the graduates are expected to achieve **within a few years (typically 3–5 years) after graduation**. They are statements about **career and professional accomplishments, ethical practice, and societal contributions** rather than immediate skills.

**For Civil Engineering:** *"Graduates will establish themselves as competent civil engineers capable of designing sustainable infrastructure and contributing positively to society while adhering to professional ethics."*

#### **PEO 1: Professional Practice, Technical Expertise and ICT Skills development**

Graduates will demonstrate competence in applying principles of civil engineering to analyse, design, and implement infrastructure systems that meet national and global standards. And also be able to use the basic knowledge of ICT to develop simple computer programmes for the analysis and design of civil engineering structural elements.

#### **PEO 2: Professional integrity & Societal Responsibility**

Graduates will uphold the highest standards of professional ethics, safety practices in civil engineering works, and social responsibility, contributing to sustainable development and addressing societal challenges in Nigeria and beyond.

#### **PEO 3: Lifelong Learning & Research and Innovation**

Graduates will pursue continuous professional development, adapt to emerging technologies, and contribute to research and innovation in civil engineering and related fields. They will also have the ability to analyse and interpret data to develop and conduct appropriate experimentation, and using engineering judgement to draw conclusions.

#### **PEO 4: Advanced study, Leadership & Teamwork**

Graduates will have basic foundation to pursue postgraduate degrees or careers as researchers, educators or leaders in the field of civil engineering and thus will be able to demonstrate effective

communication, teamwork, project management, and leadership skills in multidisciplinary and multicultural environments.

**PEO 5: Project cost estimation, Entrepreneurship & Economic Development**

Graduates will be able to conduct market surveys of materials used in civil engineering projects, analyse data collected from market survey and produce cost estimates for economic management of projects and also engage in entrepreneurial activities and contribute to national development through infrastructure delivery, consultancy, and engineering services aligned with Nigeria's economic goals.