

Civil Engineering Degree Apprenticeship

Knowledge

Civil Engineer will:

- Know how to maintain and extend their knowledge of engineering theory and practice, and how technology assists its application across a range of areas e.g., water structures and surveying)
- Understand how to solve engineering problems using a sound theoretical approach based on evidence, and how to contribute to continuous improvement.
- Understand how to contribute to the design and development of engineering solutions and how to implement those solutions effectively including how to evaluate their effectiveness in the context of the whole project life cycle.

- Know how to plan the work and resources needed to enable effective implementation of engineering tasks and projects
- Understand how to Manage the planning and organisation of tasks and resources
- Know how to Manage teams or technical specialisms
- Understand how to assist others to meet changing technical and managerial needs
- Understand how to manage quality processes and contribute to quality improvements

- Know how to manage, prepare, and control costs/budgets of engineering tasks or projects
- Have a sound knowledge of statutory and commercial frameworks and contracts within their own area of responsibility and have an appreciation of other commercial arrangements.

- Demonstrate a sound knowledge of legislation, hazards, and safe systems of work.
- Know how to manage risks and understand CDM requirements.
- Know how to Manage and implement improvements in health, safety, and welfare.
- Comprehensively understand key civil engineering principles including environmental impact and assessment

- Understand the principles of sustainable development and environmental assessment and apply them in work.

- Understand the principles of Net Zero and Carbon Emission reduction and apply them in work.
- Know how to Manage engineering activities that contribute to sustainable development and the United Nations' Sustainable Development Goals (UNSDGs).

Skills

A Civil Engineer will be able to:

- Demonstrate how they have maintained and extended their knowledge of engineering theory and practice, and how technology assists its application.
- Demonstrate how they have solved engineering problems using a sound theoretical approach, based on evidence and how they have contributed to continuous improvement.
- Contribute to the design and development of engineering solutions and how they have contributed to the implementation of those solutions including how the effectiveness in the context of the whole project life cycle was evaluated.
- Show how they have exercised sound engineering judgements.
- Communicate well with others at all levels including effective use of English or Welsh, orally and in writing to articulate effectively.
- Discuss ideas and plans competently and with confidence
- Apply and demonstrate comprehensive understanding of key civil engineering principles
- Plan the work and resources needed to enable effective implementation of engineering tasks and projects
- Assist and support the management of planning and organisation of tasks and resources within their own area of responsibility.
- Assist and support the management of teams or technical specialists within their own area of responsibility
- Assist others to meet changing technical and managerial needs
- Assist and support the management quality processes and contribute to quality improvements within their own area of responsibility.
- Assist and support the management of risks within their own area of responsibility.
- Assist and support the management of health, safety and welfare within their own area of responsibility
- Contribute to improvements in health, safety and welfare
- Apply the principles of sustainable development in work activities.
- Assist and support the delivery and management of own engineering activities.

- Demonstrate an understanding of best practice related to sustainable development and the United Nations' Sustainable Development Goals (UNSDGs).
- Apply the principles of Net Zero and Carbon Emission reduction and apply them in work.
- Demonstrate the application of statutory and commercial frameworks and contracts within their own area of responsibility and have an appreciation of other commercial arrangements such as NEC Contract management.

Behaviours for a Civil Engineer include:

- Demonstrating effective personal and Social Skills including effective collaboration with colleagues' clients and or stakeholders.
- Challenging negative behaviour.
- Demonstrating promotion of diversity, inclusion, and equality.
- Understanding and comply with Professional Body Code of Conduct
- Understanding the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner
- Planning, carrying out and recording Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice
- Identifying the limits of their personal knowledge and skills
- Engaging with Joint Board of Moderator (JBM) professional engineering institutions (PEIs)'.

Topics

1. Understanding and Practical Application of Engineering
2. Management and Leadership
3. Commercial Ability
4. Health, Safety and Welfare
5. Sustainable Development
6. Interpersonal Skills and Communication
7. Professional Commitment
8. CDM Regulations
9. Standard Engineering Principles.

This degree element of the apprenticeship should be JBM accredited