

# Carbon Capture, Utilization and Storage

## COURSE OVERVIEW

This course has been designed to equip professionals with the knowledge and skills to understand, implement, and manage Carbon Capture, Utilization, and Storage CCUS technologies, crucial for reducing carbon emissions and promoting sustainable industrial operations. It covers carbon capture techniques, including post-combustion, pre-combustion, and oxy-fuel combustion, and technologies for CO<sub>2</sub> separation, compression, and transport. The course also focuses on CO<sub>2</sub> utilization methods to produce valuable products like synthetic fuels and plastics, and explores safe, long-term CO<sub>2</sub> storage in geological formations, including site selection and monitoring. Participants will examine the economic, policy, and regulatory aspects of CCUS, including costs, feasibility, and global incentives. By the end of the course, participants will be able to evaluate, design, and implement CCUS systems, understand their environmental impact, and navigate relevant regulations and policies.

## WHO SHOULD ATTEND?

The target audience for this course includes environmental engineers, sustainability professionals, energy sector specialists, and industrial managers involved in carbon management and emissions reduction. It is also suitable for policymakers, regulators, and consultants working on climate change mitigation strategies and carbon capture technologies. Professionals in industries such as power generation, chemical production, cement manufacturing, and oil and gas, as well as academic researchers and students focusing on environmental science, energy systems, or climate change, will benefit immensely from this course.

## COURSE OUTCOMES

Delegates will gain knowledge and skills to:

- Explain the science of climate change and the impact of CO<sub>2</sub> emissions on the environment.
- Describe various carbon capture technologies and their sector-specific applications.
- Analyze the CO<sub>2</sub> capture processes from industrial sources.
- Explore methods for utilizing captured CO<sub>2</sub> in chemical processes and oil recovery.
- Explain geological CO<sub>2</sub> storage options, monitoring techniques, and regulatory requirements.
- Evaluate the economic feasibility and lifecycle of CCUS projects.
- Investigate the societal, environmental, and policy impacts of CCUS technologies.
- Collaborate to develop and present solutions to CCUS challenges.
- Apply critical thinking to propose innovative CCUS solutions for real-world problems.

## KEY COURSE HIGHLIGHTS

At the end of the course, you will understand:

- Introduction to Carbon Capture and Climate Change
- Overview of Carbon Capture Technologies
- Strategies for Carbon Utilization
- Geological Storage of CO<sub>2</sub>
- Economic Analysis of CCUS Projects
- Life Cycle Assessment (LCA) in CCUS
- Policy and Regulatory Frameworks
- Societal Implications and Public Perception
- Case Studies of Successful CCUS Projects
- Hands-On Workshops and Practical Applications

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded