



Advanced Graded Roads and Pads Design

Course Introduction:

This course provides an in-depth exploration of advanced concepts and methodologies in the design of graded roads and pads. Participants will learn the principles of grading, drainage, and material selection, along with practical applications in various engineering projects.

Course Objectives:

Upon the successful completion of this course, each participant will be able to:-

- Understand the principles of graded road and pad design.
- Learn about soil mechanics and material properties.
- Gain skills in drainage design and erosion control.
- Explore advanced design techniques and software applications.
- Develop the ability to analyze and evaluate design alternatives.

Who Should Attend?

- Civil engineers and designers
- Project managers and planners
- Environmental engineers and consultants
- Surveyors and construction professionals
- Anyone involved in road and pad design projects

Course Outline:

Day 1: Introduction to Graded Roads and Pads

- **Morning Session**
 - Overview of graded roads and pads: definitions, importance, and applications
 - Key concepts in grading design
- **Afternoon Session**
 - Introduction to soil mechanics: soil behavior and classification
 - Understanding site surveys and topographic maps

Day 2: Design Principles and Material Selection

- **Morning Session**
 - Principles of earthwork and grading: cut and fill operations
 - Material selection for graded roads and pads

- **Afternoon Session**

- Hands-on exercise: Analyzing soil samples and selecting appropriate materials
- Case studies on material performance in different environments

Day 3: Drainage Design and Erosion Control

- **Morning Session**

- Importance of drainage in road and pad design
- Techniques for effective drainage design: culverts, swales, and ditches

- **Afternoon Session**

- Erosion control measures and best practices
- Group activity: Designing a drainage system for a specific project

Day 4: Advanced Design Techniques

- **Morning Session**

- Introduction to advanced design methodologies (e.g., finite element analysis)
- Software tools for graded road and pad design (e.g., AutoCAD, Civil 3D)

- **Afternoon Session**

- Hands-on workshop: Using design software to create grading plans
- Peer review of designs for feedback and improvement

Day 5: Project Evaluation and Sustainability

- **Morning Session**

- Evaluating design alternatives: cost, performance, and sustainability
- Incorporating environmental considerations in design

- **Afternoon Session**

- Group presentations of design projects and findings
- Feedback session and discussion on continuous improvement
- Conclusion and distribution of certificates of completion

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test

- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
1p3:30 - 15:00	Last Session