



**SCANDINAVIAN ACADEMY**  
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# Course: Storm Water Drainage Study and Design

Code	City	hotel	Start	End	price	Hours
573	Manama (Bahrain)	Hotel Meeting Room	2024-10-20	2024-10-24	2950 €	25

## Objectives

- Understand storm water drainage importance in society
- Determine storm water Drainage systems requirements for a given community
- Understand procedures for analysis and design of storm water drainage systems

## Daily Outline

### Day One: Introduction, General information and Hydrology

#### Fundamental Hydrology for Sewer Design

- Factors affecting Floods
- Design frequency criteria
- Drainage Basins
- Storm water flow

#### Runoff computation methods (Rational Formula, Hydrograph Methods and others...)

### Day Two: Storm Drainage Systems

- Storm Water Drainage Systems Components



- Pavement Drainage
- Gutter Flow
- Storm Water Inlets
- Storm Drains

### **Day Three: Hydraulics of Sewers**

- Fundamental Hydraulic for Sewer Design
- Manning's Formula
- Solution of Manning's equation for circular pipes
- Design of Sewer Systems
- Preliminary Design
- Detailed Design
- iii. Principles of Design
- Providing Quality and
- Professional Training Since 1984

### **Day Four: Design Procedures and Preliminary Design**

- Storm Water Drainage Sewers
- Culverts
- Ponds
- Drainage Well

### **Day Five: Practical problems**

- Open Discussions



**The Scandinavian Academy for Training and Development employs modern methods in training and skills development, enhancing the efficiency of human resource development. We follow these practices:**

- **Theoretical Lectures:**

- We deliver knowledge through advanced presentations such as PowerPoint and visual materials, including videos and short films.

- **Scientific Assessment:**

- We evaluate trainees skills before and after the course to ensure their progress.

- **Brainstorming and Interaction:**

- We encourage active participation through brainstorming sessions and applying concepts through role play.

- **Practical Cases:**

- We provide practical cases that align with the scientific content and the participants specific needs.

- **Examinations:**

- Tests are conducted at the end of the program to assess knowledge retention.

- **Educational Materials:**

- We provide both printed and digital scientific and practical materials to participants.

- **Attendance and Final Result Reports:**

- We prepare detailed attendance reports for participants and offer a comprehensive program evaluation.

- **Professionals and Experts:**

- The programs scientific content is prepared by the best professors and trainers in various fields.

- **Professional Completion Certificate:**

- Participants receive a professional completion certificate issued by the Scandinavian Academy for Training and Development in the Kingdom of Sweden, with the option for international authentication.

- **Program Timings:**

- Training programs are held from 10:00 AM to 2:00 PM and include coffee break sessions during lectures.