This course can be adapted to virtual classroom mode

Engineering Studies during Project

3 days **MANEI-EN-A**

Overview

LEVEL

Knowledge

PURPOSE

Technical understanding and sequencing of engineering studies.

LEARNING OBJECTIVES

At the end of the training, participants will be able to:
define deliverables according to the study phase, for the main disciplines,
verify the proper execution of studies and interface management,
evaluate the consequences of a modification, before its integration into the project.

WAYS AND MEANS

Examples and diagrams from oil & gas projects, discussed in the form of exercises.
Mini-project offering practical applications for different engineering disciplines.

LEARNING ASSESSMENT

Multiple-choice questionnaires.

PREREQUISITES

Provide evidence of a professional experience of at least 1 month, related to the concerned field.

Agenda

UNDERSTANDING OF PROJECT ORGANIZATION — 0.5 d

Different types of project: size, Greenfield vs. brownfield projects.
Project structure. Main project phases. Design studies scheduling.
Overview of design studies, from pre-project to detailed engineering phase

ROLE OF ENGINEERING IN A PROJECT — 1 d

Scope of works (SOW) of the engineering activities and basis of design (BOD).
Roles of contractors and subcontractors.
Its missions: studies, procurement, construction, project management. Identification of deliverables by phases.
Conduct of studies on a project. Document management/validation (engineering, customer, vendors, subcontractors).

MAIN DELIVERIES & DISCIPLINE TASKS — 2.5 d

Analysis of the study basis. Applicable codes and standards. Kick off meeting.
Identification of tasks and deliverables during the study phases until the start of the purchasing process.

Detailed review of deliverables for the different engineering disciplines: process, health, safety and environment, layout, piping, materials/corrosion, equipment, instrumentation and automation, civil engineering/structures - Naval architecture/weight control for offshore project.
Integration of supplier documents in the study process. Management of interfaces between the different disciplines.
Management of study subcontracting.

REVIEWS & OPTIMIZATION

0.5 d

Most used review methods: HAZID, HAZOP. Design reviews, 3D model review.
Optimization: energy efficiency review. Value engineering.
Evaluation of alternatives and optimal decision-making.

KEYS TO SUCCESS

0.5 d

Interfaces management, Coordination between engineering, procurement and construction activities.
Internal constraints of the engineering schedule: interfaces between disciplines, vendor input.
How to take into account the geopolitical environment of the project, the constraints of objectives and means.
Adequacy of the deadlines of completion to the context. Deliverables related to the critical path.
Management Of Change (MOC).