MG2818
Introduction to Oil Gas Exploration Production

Professor: Pierre Jehel

Language of instruction: English – **Number of hours**: 36 – **ECTS**: 3

Prerequisites: Good level in English (course in English); Background: Bachelor level in civil or mechanical engineering. Students interested in drilling, project management,… and in general, in the Oil Gas industry.

Period: S8 Elective 13, One-week module 15-19 May IN28IS1, SEP8IS1

Course Objectives

- Complement theoretical studies with practical experience from Oil Gas Industry
- Review of the fundamental of the Gas and LNG activities
- Provide background on drilling techniques
- Give technical and practical knowledge on surface facilities including platforms and pipelines designed and installed in deep offshore
- Presentation of hazard and safety issues related to Oil and Gas Exploration and Production

On completion of the course, students should be able to

- Understand the key problems in petroleum exploration and production activities
- Apply their scientific and theoretical skills to subjects proposed in workshops

Course Contents

1. Natural Gas - LNG

- Introduction and specificities of natural gas
- Environment challenges
- Oil chain, gas chain
- Gas demand and supply
- Natural gas: production, treatment and transportation
- Liquefied natural gas: properties, processes

2. Drilling operations

- Introduction to drilling techniques
- Safety in offshore activities
- Well engineering
- Well construction
- Directional drilling
- Onshore and offshore Operations
- Drilling hazards

3. Subsea systems

- Definition, classification
- SURF hardware (Subsea Umbilicals, Risers,Flowlines)
- Subsea field layouts
- Subsea infrastructures

- Subsea installations

4. Oil and Gas Project Management

- General overview
- Project management basis
- O projects including planning, contracts, safety issues, cost control,…
- International projects

5. Geology

- Oil systems geology
- Technical approaches for oil exploration
- Oil wells characterisation

Course Organization

Duration: approx. 36h (including final student presentation/evaluation)

Courses are given by several Professors from Total Professeurs Associés

Teaching Material and Textbooks

Prints of the slides (in English), films,...

Resources

Senior engineers from Total and TPA (Total Professeurs Associeted): J. Bera, Y. Leroy and others.

Evaluation

Different subjects are given at the beginning of the week to groups of 3 to 4 students to develop during the week and present at the end