

SHORT COURSE

«Steels for the Oil and Gas Industry and Other Harsh Conditions»

Thursday 9 June 2016

The Department of Mechanical
Engineering and Materials
Science and Engineering
of the Cyprus University of
Technology organizes a one-day
course on:

«Steels for the Oil
and Gas Industry and
Other Harsh Conditions»

Sponsor:

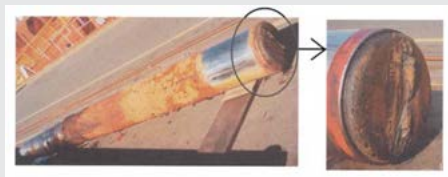


CYPRUS UNIVERSITY OF
TECHNOLOGY

The Theme:

Cyprus University of Technology responding to the need and interest from Cyprus Industry for specialty courses as expressed last year from participants of the two-day course on «Corrosion, Oxidation and Protection of Metals/Corrosion Measurement Techniques» and in view of near future developments in the field of exploration and exploitation of Oil and Natural Gas reserves, is organizing a relevant one- day course on «**Steels for the Oil and Gas Industry and Other Harsh Conditions**».

Scheduled in the near future is also another relevant specialty course/certification on«Cathodic Protection of Marine Metallic Structures - Level 1» by French Corrosion Institute in collaboration with Cyprus University of Technology.



Introduction:

Drilling for Natural Gas and Crude Oil, as well as the production, processing, storage and transportation, inflicts huge stresses and corrosion on the materials used in oil and gas industry equipment. The environment is aggressive due to acid-bearing fluids used during drilling operations as well as the presence of sulphur and hydrogen sulphide that induce corrosion in pipelines.

Similar aggressive environments in Cyprus exist in **Natural Gas and Oil storage and transportation, Marine Applications, Desalination and Sewage treatment plants, Power plants, Hydrometallurgical process plants (e.g. copper production), Food and Beverage as well as in high temperature processing plants.**

Metals used in the oil and gas industry as well as in the above industrial applications under harsh conditions have to withstand all of these problems.

Aim:

This extended course aims to provide up-to-date information to help with the selection of the most appropriate grades of stainless steels intended for use in the **Oil and Gas Industry** and **the above Industries** operating under harsh corrosive conditions.



OBJECTIVES:

- Provide participants with the basic knowledge on the Physical Metallurgy of Steels for better understanding on the relationship between structure and properties and ultimately on end uses.
- Learn about Mechanical Properties and Testing of Steels.
- Be familiar with the Heat-treatment processes for varying the structure and properties including Precipitation Hardening.
- Understand why steels are alloyed with emphasis on Stainless Steels.
- Learn about different types of Stainless Steels in terms of structure and composition.
- Understand why some Stainless Steels are non-magnetic.
- Alert participants that Stainless Steels are not immune to corrosion as corrosion resistance can be affected under certain environments and corrosion mechanisms.
- Provide basic knowledge on the Corrosion of Metals with extensive reference on the Corrosion in Stainless Steels.
- Outline the specifications, properties and uses of Stainless Steels.
- Recommend appropriate material selection for particular applications and environments.

Who Should Attend:

Engineers and technical staff of the above industries, students and academics.

Prerequisites:

At least basic understanding of science and chemistry.

LANGUAGE: English

DURATION: One-day/6 hours

FEES: € 100, 00

(includes coffees/beverages and snacks at breaks and light lunch)

VENUE:

LECTURE ROOM 3
TASSOS PAPADOPOULOS BUILDING
IFIGENIAS AND THEMIDOS CORNER
LIMASSOL

For map see here:

<http://web.cut.ac.cy/steels-oil-gas-harsh-conditions/map/>

CERTIFICATE OF ATTENDANCE:

Certificate of Attendance will be issued on the basis of course participation.

ORGANIZER / LECTURER:

George Katodrytis, Assistant Professor, Department of Mechanical Engineering and Materials Science and Engineering, Cyprus University of Technology.



COURSE TIMETABLE

Thursday 9 June 2016	TOPICS
09.00 - 09.30	Registration and coffee
09.30 - 11.00	Fundamentals of Physical Metallurgy of Metals/ Steels: Structure-Alloying-Phase Diagrams-Mechanical Properties/ Testing-Heat treatment-Alloy steels/Stainless steels-Corrosion
11.00 - 11.30	Break
11:30 - 13.00	Stainless Steels: Structure-Properties-Grades-Heat Treatment-Magnetic Properties-Weldability
13.00 - 14.00	Lunch
14.00 - 15.30	Corrosion of Stainless Steels: Forms of Corrosion- Mechanisms and Prevention-appropriate Material Selection and recommendations
15.30 - 16.00	Break
16.00 - 17.30	Stainless Steels in the Oil and Gas Industry-Marine Applications-Desalination Plants-Sewage Treatment Plants-Hydrometallurgical Process Plants (copper production)-Food Contact Applications Requirements and recommendations

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For registration go to:

<http://web.cut.ac.cy/steels-oil-gas-harsh-conditions/>