

INQUIMAE
12-QI
1994

Ref.: Expte. 432.622/80

Anexo 1 a Resolución CD N°

NUEVO MODELO DE PROGRAMA A REGIR A PARTIR
DEL 2º CUATRIMESTRE DE 1993

FACULTAD DE CIENCIAS EXCATAS Y NATURALES

U.B.A.

- 1.- INSTITUTO: INQUIMAE (Instituto de Química Física de los Materiales, Medio ambiente y Energía)
- 2.- CARRERA de: a) Actualización
- 3.- CUATRIMESTRE: 1º de 1994
- 4.- N° DE CODIGO DE CARRERA: -----
- 5.- MATERIA: Curso de "Materiales y corrosión en la industria del petróleo"
N° de CODIGO: -----
- 6.- PUNTAJE PROPUESTO: s/puntaje
- 7.- PLAN DE ESTUDIO AÑO: -----
- 8.- CARACTER DE LA MATERIA: Optativa
- 9.- DURACION: 5 días
- 10.- HORAS DE CLASE SEMANAL:
a) Teóricas: 30 hs.
b) Problemas: ---
c) Laboratorio: 10 hs.
g) Totales hs.: 40 hs.
d) Seminarios: ---
e) Teórico-problemas: ---
f) Teórico-prácticas: ---
- 11.- CARGA HORARIA TOTAL: 40 hs.
- 12.- ASIGNATURAS CORRELATIVAS: Ser graduado en Ciencias Químicas, Geológicas, Ingeniería.
- 13.- FORMA DE EVALUACION: Sin evaluación
- 14.- PROGRAMA ANALITICO: Se adjunta por separado

APROBADO POR RESOLUCION

CO 1272/94

15.- BIBLIOGRAFIA: (indicar título del libro, autor, editorial, año de publicación)

I- Ver al pie del programa.

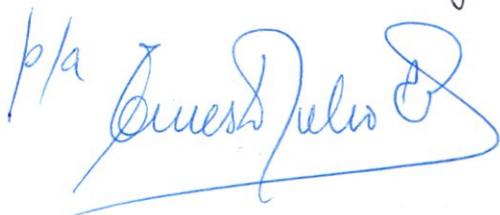
II-

III-

Fecha: 6 de junio de 1994

FIRMA DEL PROFESOR: Dr. Csevo p/a. FIRMA DEL DIRECTOR:

Aclaración firma Dr. Sergio Kopusto Sello aclaratorio: 

p/a 

MATERIALS AND CORROSION IN OIL INDUSTRY COURSE OUTLINE

1. INTRODUCTION

Background

- Oil and gas industry: production, treatment, processing, distribution
- Main processes: parameters, conditions, operability
- Materials utilization - limitations

Definitions and Concepts

- Corrosion Processes
- Corrosion Problems, Costs
- Corrosion Rates: measurements, expressions, meaning
- Forms of Corrosion
- Standards: NACE, ASTM, SPE, and other organizations

Electrochemistry

- Thermodynamics - Pourbaix diagrams
- Kinetics - Reactions, measurements
- Applications

Fundamentals of Metallurgy

- Processing, fabrication
- Mechanical testing
- Welding

Environmentally Assisted Cracking

- Stress Corrosion Cracking (SCC)
- Sulfide Stress Cracking (SSC)
- Hydrogen embrittlement (HE), Hydrogen Induced Cracking (HIC, SOHIC)
- Detection - Nondestructive examination

Fundamentals of Corrosion Control

- Corrosion control methods
 - cathodic protection, inhibition, coatings
- Materials selection
- Design for corrosion control

2. CORROSION PROCESSES IN OIL INDUSTRY

- Production environments
Oil and gas transportation
Oil and gas processing
Refineries
Petrochemical plants

3. CO₂ CORROSION

- Environmental effects: Pressure, temperature, composition, hydrodynamics
- Metallurgical effects
- Corrosion mechanisms
- Corrosion rate prediction tools: de Waard-Milliams, Barber, Tulsa, Crolet

4. H₂S CORROSION

- Environmental effects: Pressure, temperature, composition, hydrodynamics

Stress cracking and hydrogen embrittlement

- Mechanism
- Prevention - metallurgy, inhibition
- NACE MR01-75

5. CORROSION MONITORING AND INSPECTION

- Monitoring techniques
- Inspection techniques
- Inspection philosophy: rules and regulations

6. CORROSION CONTROL

Corrosion inhibition

- Types of inhibitors, methods of application
- Performance monitoring - quality assurance
- Inhibitor selection - inhibitor system design
- Inhibitor problems

Coatings

- Applications and limitations
- Coating evaluations

Cathodic Protection

- Applications and limitations

Materials Selection

- Rules, guidelines and standards
- Quality control - quality assurance
- Customer-supplier interactions

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P.E.*