



www.niulpe.org
email: info@niulpe.org

NATIONAL INSTITUTE FOR THE UNIFORM LICENSING OF POWER ENGINEERS, INC.
PO BOX 16369
PITTSBURGH, PA 15242-0369
PHONE: (888) 648-5566 FAX: (888) 648-5577

REFERENCE SYLLABUS

For

Process Operator I



PROCESS OPERATOR I

SYLLABUS

Introduction

This Syllabus is intended to assist candidates studying for the Process Operator I Examination.

Recommended Study Program:

It is recommended that, before undertaking this examination, the candidate completes Power Engineering Course of study, offered through a recognized and approved technical institute or training provider which addresses the Syllabus Outline.



PROCESS OPERATOR I

SYLLABUS

Reference Syllabus for Process Operator I Examination Candidates

Major Topic: **Piping and Valves**

Topic 1 Introduction to Energy Plant Piping Systems

Topic 2 Introduction to Energy Plant Valves

Topic 3 Steam Traps

Major Topic: **Pumps and Compressors**

Topic 4 Types of Pumps

Topic 5 Pump Operation and Maintenance

Topic 6 Air Compression

Topic 7 Compressor Operation and Maintenance

Major Topic: **Lubrication**

Topic 8 Lubrication

Major Topic: **Prime Movers and Heat Engines**

Topic 9 Heat Engines and Prime Movers

Topic 10 Steam Turbines

Topic 11 Gas Turbines

Topic 12 Internal Combustion Engines

Major Topic: **Heat Exchangers**

Topic 13 Cooling Towers

Major Topic: **Electrotechnology**

Topic 14 Basic Electricity

Topic 15 Magnetism and Electromagnetism

Topic 16 Electrical Metering Devices

Topic 17 Motors and Generators



PROCESS OPERATOR I

SYLLABUS

Reference Syllabus for Process Operator I Examination Candidates

Major Topic: Instrumentation and Controls

Topic 18 Introduction to Energy Plant Controls and Instrumentation

Topic 19 Introduction to Process Measurement

Topic 20 Basic Control and Instrumentation Components

Topic 21 Introduction to Programmable Controllers

Major Topic: Plant Maintenance and Processes

Topic 22 Powerhouse Maintenance I

Topic 23 Common Plant Configurations in Hydrocarbon Centric Industries



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REFERENCE SYLLABUS

For

Process Operator II



PROCESS OPERATOR II

SYLLABUS

Introduction

This Syllabus is intended to assist candidates studying for the Process Operator II Examination.

Recommended Study Program:

It is recommended that, before undertaking this examination, the candidate completes Power Engineering Course of study, offered through a recognized and approved technical institute or training provider which addresses the Syllabus Outline.



PROCESS OPERATOR II

SYLLABUS

Reference Syllabus for Process Operator I Examination Candidates

Major Topic: **Piping and Valves**

Topic 1 Piping Design, Connections, and Support

Topic 2 Steam Traps, Water Hammer, and Insulation

Topic 3 Valves and Actuators

Major Topic: **Pumps and Compressors**

Topic 4 Pump Designs and Operation

Topic 5 Compressor Theory and Designs

Topic 6 Compressor Auxiliaries and Operation

Major Topic: **Lubrication**

Topic 7 Types of Bearings and Lubrication

Major Topic: **Prime Movers and Heat Engines**

Topic 8 Steam Turbine and Principles Design

Topic 9 Steam Turbine Auxiliaries and Operation

Topic 10 Turbine Condenser Systems

Topic 11 Gas Turbine Principles and Designs

Topic 12 Gas Turbine Auxiliaries and Operation

Topic 13 Internal Combustion Engines

Major Topic: **Heat Exchangers and Fired Systems**

Topic 14 Heat and Cooling Towers

Topic 15 Fired Heaters

Major Topic: **Electrotechnology**

Topic 16 Transformers

Topic 17 Electrical Distribution Circuits

Topic 18 Electrical Theory and DC Machine

Topic 19 AC Theory and Machines

Topic 20 AC Systems, Switchgear, and Safety



PROCESS OPERATOR II

SYLLABUS

Reference Syllabus for Process Operator I Examination Candidates

Major Topic: Instrumentation and Controls

Topic 21 Electrical Control Systems

Topic 22 Control Loops and Strategies

Topic 23 Instrument and Control Devices

Topic 24 Distributed and Logic Control

Major Topic: Plant Maintenance

Topic 25 Powerhouse Maintenance II