

Modules in Course Report



Course Code	SPC WEB			
Course Name	Steam Power & Cogeneration Course - Web Based			
Elective Units				
State Code	National Code	Name	Hours	Description
SPC01		Co-Generation & Other Turbine Cycles	7	The first module on "Steam Power and Co-Generation" presents the different cycle arrangements that are commonly employed in steam turbine power generation installations. Energy concepts and steam fundamentals are also reviewed to improve understanding and provide examples of efficiency calculations. Finally, to prepare the way for the remainder of the series, an introduction is made to the major systems of the steam power plant and their functions.
SPC02		Steam Production	7	The objective of this module is to look at the concept of steam generation, and to present features of design and construction of boilers (steam generators). Both the water side and gas side of the boiler are dealt with, but the subject of combustion and burner equipment is left to the next module.
SPC03		Fuels & Combustion	7	The objective of this module is to present the characteristics of different types of fuel, and look at the factors governing efficient combustion. Various types of burner equipment are demonstrated for burning coal, oil, natural gas, wood, and low grade fuels such as municipal waste.
SPC04		Boiler Operation	7	The objective of this module is to present the major features of boiler operation. Startup, shut-down, and on-load conditions are dealt with, including a discussion on potential hazards and boiler protection devices
SPC05		Boiler Control (Operation, Environmental & Chemical)	7	The objective of this module is to focus attention on the areas of control which are essential for successful boiler operation including; automatic controls, boiler water conditioning, and environmental control.

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SPC06		Steam Turbine Construction	7 The objective of this module is to present the major features of Steam Turbine construction, and support systems.
SPC07		Steam Turbine Operation & Control	7 The objective of this module is to present and discuss the major features of steam turbine operation, protection and control. Particular attention is paid to the effect of changes in load or steam temperature on mechanical operation of the turbine, and consequent need for supervisory instrumentation and automatic protection devices.
SPC08		Power Generation	7 The objective of this module is to draw attention to important operating parameters of the Power Generator. A review of fundamentals is included as an aid to understanding the significance of generator control.
SPC09		Plant Auxiliary Systems	7 The objective of this module is to present and discuss typical arrangements of plant systems and auxiliary equipment, all of which fulfil a specific function and need in power plant operation.
SPC10		Power Plant Maintenance	7 The objective of this module is to present and discuss the various types of maintenance that must be carried out in a steam power plant. We also look at documentation which is required for planning and control of maintenance. Also demonstrated are typical maintenance tasks that are normally performed on major items of equipment during plant inspection outages and major overhauls.
SPC11		Combined Heat & Power Systems	7 The objective of this module is to present the principles and practice of C.H.P. (Combined Heating and Power) systems. Utilizing heat recovery from different types of prime mover including steam turbines, gas turbines, and diesel engines. In addition to heat recovery equipment, typical district heating distribution systems are also discussed.

Count: 11

Total Hours: 77

Learning and Assessment Strategy Report



(SPC WEB) Steam Power & Cogeneration Course - Web Based

Courses are conducted as web based online learning . Each Unit is broken into segments which focus on a particular topic. The content of each Unit is structured to lead from one segment to the next and one Unit to the next.

During each segment the trainee answers questions appropriate to the topic. Any question that is answered incorrectly refers the trainee back to that learning topic.

At the end of viewing each segment the trainee undertakes a Segment Test. The Segment Test indicates the level of understanding for that Segment.

On completion of all Segments the Trainee can undertake a Post Test. The Post Test is the final test and determines the issuance of Certificates and also closes that Unit out.

Each Web Unit is approximately 4 hour in duration and a total learning time of approximately 44 hours for the Course is required.

All online learning must be coupled with learning in the workplace.