Daffodil Polytechnic Institute, Institute Code: 50238

Subject Teacher : Md. Jihad Hasan.
Subject Name : General Maintenance & Utility Service.
Subject Code : 21861
Technology : Textile Technology
Semester : 5th Textile & Apparel
Reference Book : General Maintenance & Utility Service (Publisher: Prime Publication)

Marks	Grade Point	Letter Grade	*Marks*	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B-
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	0-39	0.00	F

Time Distribution (90min)	
Particular	Time
Greeting with students	5 Min
Previous class review	10 Min
Present class lecture	60 Min
Feedback	10 Min
Attendance	5 Min

THEORY LESSON PLAN

Chapter	Learning Area	Learning Outcome	Supporting Equipments
1.	**GENERAL CONCEPT OF MAINTENANCE** 1.1 Define maintenance. 1.2 Mention the Importance of maintenance. 1.3 Discuss different types of maintenance. 1.4 Explain different steps of maintenance. 1.5Explain the cleaning procedure in maintenance.	1) To gain knowledge about Maintenance. 2) To know about the properties and procedure of maintenance.	Text Book, marker& Link:
2	**MAINTENANCE TOOLS,REPAIRINGAND OVERHAULING** 2.1 Define the tools and equipment. 2.2 Discuss different types of tools and equipment. 2.3 Mention the list of general tools used in maintenance.	1) To gain knowledge about Maintenance tools	Text book, marker & Link:

	2.4 Explain repairing and overhauling. 2.5 Discuss the advantages and disadvantages of repairing. 2.6 Differentiate between repairing and overhauling.		
Quiz Test - 1 Date:		**Evaluation of Chapter- 1 & 2**	**Questions & answers script**
3	**CONCEPT OF POWER TRANSMISSION SYSTEM** 3.1 Define power transmission. 3.2 Discuss different types of power transmission. 3.3 Discuss different types of pulleys. 3.4 Describe different types of belts. 3.6 Mention the advantages and disadvantages of belt drive. 3.7 Describe different types of gear and gear trains. 3.8Explain the nomenclature of gear.	1) To gain knowledge about the power management system. 2) To know about pulleys, belts, gear	Text Book, Marker & Link:
4	**BEARING, BUSH AND SHAFT** 4.1 Define bearing, bush and shaft. 4.2 Describe functions of bearing. 4.3 Describe different types of bearing. 4.4 Mention the functions of bush. 4.5 Discuss different types of shafts.	1)To gain knowledge about bearing 2) To gain knowledge about Bush & shaft	Text Book, Marker & Link:
Class Test - 1 Date:		**Evaluation of Chapter- 3 & 4**	**Questions & answers script**
5	**LUBRICANT AND LUBRICATION** 5.1 Define lubricant and lubrication. 5.2 Discuss the functions of lubricant. 5.3Describe types of lubrication. 5.4 Describe the lubrication processes. 5.5Mention the properties of a good lubricant. 5.6 List different types of lubricants.	1) To gain knowledge about Lubricants. 2) To gain knowledge about types of lubricants.	Text Book, Marker & Link:
MID TERM EXAM - (Exam starts from March 01)		**Syllabus: Chapter 1-5**	
6	**BOILER** 6.1 Define boiler. 6.2 Classify boiler. 6.3Discuss Boiler mountings and boiler accessories. 6.4 Classify boiler. 6.5Describe working principle of boiler. 6.6Explain boiler blow down and boiler scaling.	1)To gain knowledge about Boiler & boiler accessories. 2) To know about the working principal of boiler.	Text book,, Marker & Link:

	6.7Discuss boiler efficiency. 6.8Mention the utility of boiler.		
7	**PUMP AND COMPRESSOR** 7.1 Define pump and compressor. 7.2 Mention the necessity of pump and compressor. 7.3Classify pump and compressor. 7.4 Describe the working principle of centrifugal, reciprocating and rotary pump. 7.5Mention the uses of compressors in textiles. 7.6Illustrate centrifugal compressor. 7.7 Discuss reciprocating compressor.	1)To gain knowledge about pump & compressor.	Text book, Marker & Link:
Quiz Test - 2 Date:		**Evaluation of Chapter- 6 & 7**	**Questions & answers script**
8	**REFRIGERATION AND AIR CONDITIONING** 8.1 Define refrigeration and air conditioning systems. 8.2 Discuss different types of air-conditioning systems. 8.3Discuss important components of refrigeration. 8.4Describe working principle of central air conditioning system. 8.5 Discuss the main components of chiller. 8.6Define humidification. 8.7Mention the importance of humidification.	1) To know about the knowledge of Refrigeration & Air conditioning. 2) To know about the knowledge of working principal of Refrigeration & Air conditioning.	Text book, Marker & Link:
9	**MOTOR, GENERATOR ANDTRANSFORMER** 9.1 Define motor, generator and transformer. 9.2 Mention types of motors, generators and transformers. 9.3 State the functions of motor and transformer. 9.4 State the main parts of generator. 9.5 Describe the working principle of generator. 9.6 Describe generator capacity.	1) To gain knowledge about Motor, Generator & Transformers.	Text book, Marker & Link:
Class Test - 2 Date:		**Evaluation of Chapter- 8 & 9**	**Questions & answers script**
10	**SAFETY MAINTENANCE AND SCHEDULING** 10.1Discuss safety measures in maintenance. 10.2 Mention the importance of safety in maintenance. 10.3 Discuss the different types of safety devices. 10.4 State the safety rules of maintenance. 10.5 Define schedule maintenance. 10.6 State the work plan and weekly worksheet.	1) To gain basic knowledge about Safety Management. 2) To know about importance of safety management & Scheduling.	Marker, Text Book & Link:

	10.7 State the machine card and maintenance ledger. 10.8Explain breakdown report. 10.9 State the lubrication control chart.		
Submission of Assignment or Presentation (All Chapters)		**Date:**	
Total Class & Quiz Tests: 4		**Total Class: 30**	

Detailed Syllabus (Practical)

1	**OBSERVE GENERAL TOOLS FOR MAINTENANCE** 1.1 Observe the hand tools for maintenance. 1.2 Sketch the different types of hand tools. 1.3 Identify different types of hand tools. 1.4 Observe the operation of hand tools. 1.5 Maintain the record of performed experiment.	**2.5**
2	**SELECT LUBRICANTS FOR LUBRICATION** 2.1Identify lubrication tools. 2.2 Identify lubricator. 2.3 Select lubricants. 2.4 Maintain the record of performed experiment.	**2.5**
3	**DEMONSTRATE LUBRICATION IN GEAR** 3.1 Identify lubrication tools. 3.2 Identify gear. 3.3 Select the lubricant 3.4 Observe precautions in lubrication. 3.5 Maintain the record of performed experiment.	**2.5**
4	**OBSERVE THE CENTRIFUGAL PUMP AND COMPRESSOR** 4.1Identify parts of centrifugal pump. 4.2 Sketch the centrifugal pump. 4.3 Demonstrate the operation of centrifugal pump. 4.4 Illustrate centrifugal compressor. 4.5 Recognize the use of compressors in textiles. 4.6Maintain the record of performed experiment.	**2.5**
5	**DEMONSTRATE PARTS OF BOILER** 5.1 Identify boiler mountings and accessories. 5.2Sketch boiler mountings and accessories 5.3Observe operation of boiler mountings and accessories. 5.4 Calculate boiler efficiency and equivalent evaporation 5.4Maintain the record of performed experiment.	**2.5**
6	**OPERATEGENERATOR** 6.1 Observe the main parts of generator. 6.2 Sketch the main parts of generator.	

	6.3 Perform operation of generator. 6.4 Maintain the record of performed experiment.	
7	**OBSERVEAIR CONDITIONING SYSTEM** **7**.1 Draw the vapor compression refrigeration system. 7.2 Sketch main components of refrigeration. 7.3 Identify the main components of chiller. 7.4 Identify duct, AHU, FCU, and piping of central airconditioning. 7.5 Maintain the record of performed experiment.	**2.5**
8	**OPERATEMOTOR** 8.1 Identify the main parts of motor. 8.2 Perform operation of motor. 8.3 Demonstrate the functions of motor. 8.4 Performmegger test of motor. 8.5 Maintain the record of performed experiment.	**2.5**
9	**OBSERVETRANSFORMER** 9.1 Observe transformer. 9.2 Calculate transformer capacity. 9.3 Identify the functions of transformer. 9.4 Maintain the record of performed experiment.	**2.5**
10	**PREPARE WORK PLAN FOR TEXTILE MILL MANAGEMENT** 10.1 Identify maintenance machinery 10.2 Identify machinery for repairing 10.3 Identify machinery for overhauling 10.4 Prepare datasheet 10.5 Maintain the record of performed experiment.	**2.5**
	Total	**25**