Folder		ME108 Principle of Engines
File		ME108 Principle of Engines
		Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter	Page			Topics	
					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary	
Thermod01.pdf			All		Introductory, caloric, calories, heat energy, applicability	
Thermod04.pdf			All		Thermal conduction	
Thermod05.pdf			All		Thermodynamic processes	
Thermod06.pdf		1	to	10	Properties of gases	
Thermod07.pdf			All		First and second law of thermodynamics	
Thermod08.pdf			All		Enthalpy	
Thermod09.pdf		1	to	18	Heat engines	
Thermod11.pdf			All		Third law of thermodynamics	
Thermod16.pdf			All			
Thermodynamic properties. pdf		1	to	18	Thermodynamics properties, generalized equation, residual properties function, departure function, properties of saturation state, Third law of thermodynamics	
The second law.pdf			All		Cycle with two heat reservoirs. Carnot's principle. Entropy	
Exercise	Q1161	to	Q1169		of Assignment (81+82)	

Folder		ME108 Principle of Engines
File		Engine Fluid Mechanics
		Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter	Page			Topics	
					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary	
Page 2.mht			All		Valve definition	
Page 3.mht			All		Geometric properties of valve	
Page 4.htm			All		Intake flow	
Page 5.htm			All		Exhaust flow	
Page 6.htm			All		Valve timing	
Page 7.htm			All		Intake & exhaust tuning	
Page 8.htm			All		Vehicle power requirement	
Exercise	Q1170	to	Q1176		of Assignment (81+82)	

Folder		ME108 Principle of Engines
File		Heat
		Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter	Page			Topics	
					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary	
Page 2.htm			All		Slider crank model	
Page 3.htm			All		Work	
Page 5.htm			All		Model of basic Otto cycle	
Page 6.htm			All		Simple finite heat release model	
Page 7.htm			All		Qin	
Page 8.htm			All		Finite heat release model	
Page 9.htm			All		Stoichiometry	
Page 10.htm			All		Determination of Qin from fuel heating value	
Page 11.htm			All		Chemical equilibrium	
Exercise	Q1177	to	Q1185		of Assignment (81+82)	

Folder		ME108 Principle of Engines
File		Heat Transfer Engine
		Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter	Page			Topics	
					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary	
Page 2.htm			All		Introduction	
Page 3.mht			All		Energy flow in engine	
HT Page 4.mht			All		Heat transfer mechanism	
Page 5.htm			All		Heat transfer resistance modelling	
Page 6.htm			All		Cylinder heat transfer process	
Page 7a.htm			All		Instantaneous heat transfer coefficients	
Page 7aa.htm			All		Engine heat transfer correlations	
Page 8.htm			All		Coolant heat transfer	
Page 9.htm			All		Intake & exhaust system heat transfer	
Exercise	Q1186	to	Q1194		of Assignment (81+82)	

Folder				ME201 Introduction to fluid mechanics
File				ME201 Introduction to fluid mechanics
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
1	9	to	21	Physics of fluids
2	24	to	46	Fluid statics
	55	to	90	Basic of fluid flow
	106	to	122	Viscous flow in pipe
	121	to	144	Pumping of liquids
Exercise	Q1195	to	Q1205	of Assignment Number (83)

Folder				ME202 Introduction to Aero-Dynamics
File				ME202 Introduction to Aero-Dynamics
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	6	to	41	Fundamental concepts in aero-dynamics & inviscid, Incompressible flow
	42	to	65	Fundamental of inviscid compressible flow
	66	to	83	Fundamental of viscous flow
	84	to	95	Wind tunnels
Exercise	Q1206	to	Q1213	of Assignment Number (84)

Folder				ME204 Engineering Fluid Mechanics
File				ME204 Engineering Fluid Mechanics
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	14	to	46	Fluid statics
	47	to	75	Internal fluid flow
	77	to	90	External fluid flow
	93	to	116	Compressible fluid dynamics
	117	to	129	Hydro-electric power, Turbines
	140			Equations
Exercise	Q1214	to	Q1252	of Assignment Number (85)

Folder				ME206 Introduction to turbo machinery
File				ME206 Introduction to turbo machinery
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	16	to	24	Introduction
	25	to	34	Relative & absolute motion
	35	to	45	Simple analysis of wind turbines
	46	to	60	Different turbo machines and their applications/ operation
	61	to	74	Application of equations of fluid motion
	74	to	82	Efficiency & reaction
	83	to	93	Dimensionless parameters for turbo machinery
	94	to	107	Axial flow machine
	108	to	125	Hydraulic turbines
	126	to	138	Analysis of pumps
	139	to	144	Summary
Exercise	Q1253	to	Q1282	of Assignment Number (86)

Folder				ME301 Fluid Dynamics
File				ME301 Fluid Dynamics
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	8	to	18	Introduction
	19	to	32	Basic equation of fluid flow & level of approximation
	33	to	47	Basic computational techniques
	48	to	55	Properties of numerical schemes
	56	to	67	Finite difference method
	68	to	90	Finite element method
	91	to	102	Finite volume method
Exercise	Q1283	to	Q1296	of Assignment Number (87)

GROUP (2) MANUFACTURING PROCESS

Study the following units, textbooks and topics related to manufacturing.

Then write an essay (20 page) to describe the manufacturing system of your choice and submit it as ASSIGNMENT (88) to complete ME 205, ME 302, ME 303 and ME 305.

ME 205 Manufacturing process and materials

- Non conventional manufacturing process
- Electro-discharge machining process
- Factors causing tool wear
- Acceptance sampling
- Principle of Resin Transfer Moulding (RTM)
- Fibre reinforced plastic composites
- A cutting edge on a steel bar
- Electro-discharge machining EDM requirement and properties
- Hard and soft automation.
- Surface integrity of manufactured surfaces and applications.
- Bored holes / plug and gap gauges

ME 302 Automation and Robotics

Chapter 1	An optimized loud speaker assembly for a machinized serial production line
Chapter 2	Design of speakers production assembly line of capacity 180000/ month, 15 products variants
Chapter 3	Strategic approaches to resource husbandry and recovery: The super wash combo case study
Chapter 4	Software engineering & data communication: An automatic laminating plant
Chapter 5	Robot grip mechanism: control loop design consideration

ME 303 Computer Aided Design & Manufacturing

1. Computer program in manufacturing
2. Computer program in design
3. CAD/ CAM selection/ Evaluation and Management
4. CAM application / Evaluation : A model processing case study
5. Reverse engineering –Rapid prototyping

ME305 Corrosion Prevention

- Introduction

1. Relative Humidity
2. Saturation
3. Equilibrium relative humidity
4. Harricanes, Typoons & Cyclones
5. Health
6. Food
7. Potato Blight
8. Salt
9. ERH Revisited
10. Water
11. Olive Tree
12. Oil + Water
13. House mites
14. Challenge

GROUP (3) HYDRO CARBON PRODUCTION

Study the following units, textbooks and topics related to manufacturing.

Then write an essay (20 page) to describe the manufacturing system of your choice and submit it as ASSIGNMENT (89) to complete ME 207, ME 208 and ME 209 .

ME 207 Chemical Thermodynamics

1. Introduction
2. Single component system
3. Multi components system
4. Ideal solution model
5. Partial molar properties
6. Non ideal solution
7. Stability
8. Liquid-Solid equilibrium
9. Gas solubility & Henry's law
10. Equation of states

ME 208 Hydro Carbons

1. Physical properties of organic liquids
2. Physical properties of crude oil
3. Physical properties of gasolines, Natural gas condensate
4. Physical properties of kerosenes
5. Diesel fuel
6. Products of refinery residues
7. Coal tars
8. Alcohol containing fuels
9. Bi-diesel fuels
10. Hydro carbons existing either as cryogens or as liquefied gases

ME 109 Engineering Drawing

Click the resources link and follow the study instruction.