

TOTAL	25				

GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **ME202**

SUBJECT NAME : **Fluid mechanics and fluid machines**

FACULTY NAME : **Dhirendra kumar jain**

DESIGNATION : **Sr.Lect(mech)**

TOPIC	LECTURE / PRACTICAL CLASSES REQUIRED TO COVER TOPIC	MONTHS IN WHICH THE TOPIC WILL BE COVERED	ACTUAL DATE OF COVERING OF THE TOPIC	REASON FOR NOT COVERING THE TOPIC IN DUE TIME	E-CONTENTS PROVIDED TO STUDENTS RELATED TO TOPIC
Introduction concepts, Fluids and solids Liquid, gas and vapour	2	Aug-15			
Fluid mechanics, Kinematics, Dynamics	2	AUG			
Fluid properties	2	SEP			
Fluid Pressure and its Measurement:	3	SEP			
Total pressure, Centre of pressure Total pressure and center of pressure in following cases, Plane surface immersed horizontally, Plane surface immersed vertically, Plane surface immersed at an angle, <i>Curved surface (no proof)</i>	3	SEP			
Working of lock gates, sluice gate, Pressure on masonry dams of rectangular and trapezoidal sections and their condition of stability	3	OCT			
Hydrokinematics :	2	OCT			
Hydrodynamics and Measurement of Flow:	3	OCT			
Orifices:	2	NOV			
Types of flow in pipes (Reynold's experiment), Laminar flow, Turbulent flow Transient flow, Law of fluid friction, Laminar flow. Turbulent flow, Loss of head due to friction (No. proof) Darcy's Weisbach equations, Chezy's formula, Manning formula	4	NOV			
Other energy losses in pipe (only expressions) Total energy line and hydraulic gradient line, Pipe arrangement Pipes in series, Pipes in parallel Transmission of power through pipes Siphon, Water hammer	3	DEC			
Impulse momentum equation (no proof) Force exerted by a fluid jet on stationery flat plate, Force exerted by fluid jet on moving flat plate	3	DEC			
stationary curved Force exerted by fluid jet on vane, Force exerted by a fluid jet on moving curved vane.	3	Jan-16			
Classification of water turbines Pelton turbine, Working principle, Constructional features	4	JAN			

TOTAL	26				

GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **ME301**

SUBJECT NAME : **Refrigeration and air conditioning**

FACULTY NAME : **Dhirendra kumar jain**

DESIGNATION : **SR. LECTURER (Mechanical)**

TOPIC	LECTURE / PRACTICAL CLASSES REQUIRED TO COVER TOPIC	MONTHS IN WHICH THE TOPIC WILL BE COVERED	ACTUAL DATE OF COVERING OF THE TOPIC	REASON FOR NOT COVERING THE TOPIC IN DUE TIME	E-CONTENTS PROVIDED TO STUDENTS RELATED TO TOPIC
heat pump, refrigeration, Refrigeration methods, Units of refrigeration, machines Rating of refrigeration machines	3	Aug-15			
Air Refrigeration System- Reversed Carnot cycle, theoretical and actual. Reversed Brayton cycle-closed and open system. Applications and limitations, Advantages and disadvantages of air refrigeration cycle	4	SEP			
Theoretical vapour compression cycle, Effect of sub- cooling, super heating on compression cycle	4	SEP			
Deviation of actual cycle from theoretical cycle, Coefficient of performance	2	OCT			
Effect of varying condensing and suction temperatures and pressure on C.O.P. Use of graph Simple numerical problems	2	OCT			
Methods of improving C.O.P., Flash chamber, Sub cooling of liquid refrigerant by using vapour refrigerant, Sub cooling by external cooling source, Sub cooling with liquid refrigerant	4	OCT			
Vapour Absorption System, Simple vapour absorption systems, Comparison with vapour compression system, Refrigerants: Electrolux refrigerator	5	NOV			
Important properties of refrigerants, Nomenclature of refrigerants. Refrigerants primary refrigerants, secondary gerants. New refrigerants viz : Tetraflouroethane, propone and isobutene	2	DEC			
Reciprocating compressors, rotary compressors, centrifugal compressors Condensers of various types	3	DEC			
Cooling towers, spray ponds, Evaporators of various types	2	Jan-15			
Defrosting and throttling devices, Automatic expansion valve, thermostatic expansion valve and capillary tube, solenoid valve.	2	JAN			
Domestic and commercial refrigerators, their systems, specifications and types Water coolers of various types Effect of moisture in refrigeration system and methods of removing it.	4	JAN			
Production of Low Temperature : Introduction, Limitation of vapour compression system in creating of low temperature Two stage cascade refrigeration system (no analysis) Manufacturing of dry ice (no numerical problems)	3	FEB			

