GOVERNMENT POLYTECHNIC COLLEGE, KOTA (RAJ.)

SYLLABUS BREAK-UP (SESSION 2015-16)

SUBJECT CODE : **ME204** SUBJECT NAME : **Thory of Machines**

FACULTY NAME : **RAJESH KUMAR SHARMA** DESIGNATION : **HOD (MECH. ENGG.)**

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
Definition and importance, types of production -job, batch and mass forecasting, routing, scheduling, dispatching and follow up.	3	Aug-15			
Break even analysis and Gantt chart	2	Sep-15			
Project scheduling, application of CPM and PERT techniques	3	Sep-15			
Analysis and control of project cost in CPM and PERT, simple numerical problems.	2	Sep-15			
Definition, types of inventory - Codification and standardization	2	Sep-15			
ABC analysis. Economic ordering quantity	2	Oct-15			
Procurement cost, carrying charges, lead-time, re-order point, simple problems.	2	Oct-15			
efinitions, types of inspection and procedu	1	Oct-15			
Basic theory of quality control, Process ca	2	Oct-15			
Control charts for variables – X and R, relationship between control limits and specification limits. Control chart for fraction defective (p), control chart for number of defect (c)	3	Nov-15			
Acceptance sampling - Selection of samples, sample size, method of taking samples. Samplings plan - single, double, sequential. Acceptance quality level (AQL), lot tolerance percentage defective (LTPD), producer's risk, consumer's risk. Operating characteristic curve, simple problems.	3	Nov-15			
Definition, advantages and procedure of work-study. Difference between production and productivity, Factors to improve productivity	2	Nov-15			
Method Study :- Definition, objectives and procedure of method study.	2	Nov-15			
Symbols, flow process chart (man-machine-material), flow diagram, machine chart, two hand chart	2	Dec-15			
cal examination. Developing a new me	1	Dec-15			

Principles of motion economy. Therblig symbols, SIMO chart, simple problems	2	Jan-16			
Work Measurement -time study, definition, principle and method of time study	2	Jan-16			
Stop watch study - number of reading, calculation of basic time, rating techniques, normal time, allowances, standard time	1	Jan-16			
Simple numerical problems.	1	Jan-16			
Work Sampling - Definition, method, advantages and disadvantage of work sampling Applications.	2	Jan-16			
Definition, factors affecting the site selection of plant Factor affecting plant layout, Types of layout - process, product, combination and fixed position layout	4	Feb-16			
Techniques in making layout-Flow diagram, templates, distance volume matrix, travel chart	1	Jan-16			
Line balancing, workstation, Numerical problem.	2	Feb-16			
Principles of economic material handling	1	Feb-16			
Hoisting equipment - forklift truck, Cranes-mobile motor cranes, overhead cranes, travelling bridges crane. Derrick crane. Whiler crane Conveying equipment - Package conveyors, gravity roller conveyors, screw conveyors, flight or scraper conveyors, bucket conveyors, bucket elevators, belt conveyors, pneumatic conveyors.	4	Feb-16			
Formulation L.P. problem 7.2 Graphical method for optimal solution	3	Mar-16			
Simplex method for optimal solution	2	Mar-16			
Definition Obsolescence and amortization	1	Mar-16			
Different methods of calculating depreciation Numerical problems.	2	Mar-16			
TOTAL	60				

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1.:Introduction to link, kinematic pair, kinematic chain, structure, mechanism, machine	2	Aug-15			
2. Slider crank mechanism and its inversion, Double slider crank chain	2	AUG, SEPT 2015			
3. Example of mechanism with higher pairs	1	Sep-15			
Velocity diagrams of four bar and single slider crank mechanisms by relative velocity method and instantaneous centre method	4	SEPT, OCT2015			
Acceleration diagram of four bar chain and reciprocating engine mechanism, coriolis components	4	Oct-15			
Analytical method for velocity and acceleration of piston	1	Oct-15			
Piston effort, crank pin effort, turning moment diagrams	1	Oct-15			
Fluctuation of energy and speed	5	Oct-15			
Energy of a flywheel					
Calculating the weight of flywheel.	2	Nov-15			
Friction of collars and pivots Friction clutches-plate clutch and centrifugal clutch Friction in journal bearings Rolling friction	4	Dec-15			
Flat and V-belt drives Velocity ratio of belt drives, slip in belt, and creep in belt.	2	Dec-15			
Length of open and cross belt drive Power transmitted by a belt	4	Dec-15			
Ratio of driving tension, centrifugal tens	4	Nov-15			
Chain drives - types of chain drives roller chain and inverted tooth chain.	4	Dec-15			
Static and dynamic balancing, need of balancing 6.2 Balancing of single rotating mass by a single mass in the same plane, by two masses rotating in different planes.	3	Dec-15			
Partial primary balancing of a single cylinder reciprocating engine	1	Jan-16			

Causes of vibrations in machine, their effects and method of reducing them 7.2 Free or natural vibration 7.3 Forced vibration 7.4 Damped vibration.	2	Jan-16			
Introduction and classification of governors	1	Jan-16			
Methods of governing (Quality, Quantity and hit and miss governing	2	Feb-16			
Dead wt governors (watt , porter and proell) 8.4 Spring control governors (hartnell and Wilson hartnell)	2	Feb-16			
Concept of sensitivity, stability, isochronism , hunting, effort and power.	2	Feb-16			
Introduction, function, capacity of brakes : 9.1.1 Block and shoe brake 9.1.2 Band brake 9.1.3 Internal expanding brake	2	Feb-16			
Functions of dynamometer, Prony brake, Rope brake and Froude's hydraulic dynamometer	2	Mar-16			
Gyroscope – Introduction and principle, Gyroscopic couple	2	Mar-16			
TOTAL	59				