FORM NO. - GITM-FRM-73 (REV. NO. 02)

	GURGAON INSTITUTE OF TECHNOLOGY & MANAGEMENT
	COURSE PLAN

Name of the Teacher: Mandeep Kaur	
Department: Mechanical Engg.	Session: 2017-2018
Branch/Semester: Mechanical/ 4th	Subject Name & Code: K.O.M (ME: 204-F)

Books Referred:

Text Books :

1. Theory of Machine by S.S. Ratan
2. Theory of Machine by Dr. R.K. Bansal & Dr. J.S. Brar
3. Theory of Machine by R.S. Khurmi

Reference Books :

1. Theory of Mechanisms and Machines: Amitabha Ghosh and Ashok kumar Malik, Third Edition Affiliated East-West Press**.**
2. Theory of Machines and Mechanisms: Joseph Edward Shigley and John Joseph Uicker, Jr. Second Edition, MGH, New York.

Lecture	Topics to be Covered
1.	Introduction: mechanism and machines, kinematics links, kinematics pairs, kinematics chains, degree of freedom
2.	Grubler's rule, kinematics inversion, equivalent linkages, four link planar mechanisms
3.	Inversion of Single Slider Crank Mechanism
4.	Inversion of Double Slider Crank Mechanism
5.	Straight line mechanisms, steering mechanisms, pantograph, problems
6.	Kinematics Analysis of Plane Mechanisms: displacement analysis, velocity diagram,
7.	Relative velocity method
8.	Instantaneous center of velocity
9.	Kennedy's theorem, graphical and analytical methods of velocity and acceleration analysis,
10.	Cams: Classification of cams and followers,
11.	Disc cam nomenclature,

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12.	Construction of displacement, velocity and acceleration diagrams for different types of follower motions, analysis of follower motions
13.	Determination of basic dimension, synthesis of cam profile by graphical methods, cams with specified contours, problems
14.	Gears: fundamental law of gearing, involute spur gears
15.	Characteristics of involute and cycloidal action, Interference and undercutting
16.	Center distance variation, path of contact, arc of contact
17.	Non standard gear teeth, helical, spiral bevel and worm gears, problems
18.	Gear Trains: synthesis of simple, compound and reverted gear trains,
19.	Analysis of epicylic gear trains, problems.
20.	Kinematics synthesis of Mechanisms: function generation, path generation
21.	Freudenstein's equation, two and three position synthesis of four bar
22.	Two and three position synthesis of slider crank mechanisms
23.	Precision positions, structural error
24.	Chebychev spacing, transmission angle, problems
25.	Friction : Types of friction, laws of friction, motion along inclined plane,
26.	Screw threads, efficiency on inclined plane, friction in journal bearing, friction circle and friction axis
27.	Pivots and collar friction, uniform pressure and uniform wear.
28.	Belts and pulleys: Open and cross belt drive, velocity ratio, slip, material for belts, crowning of pulleys, law of belting,

29.	Types of pulleys, length of belts,
30.	Ratio of tension, centrifugal tension,
31.	Power transmitted by belts and ropes, initial tension, creep
32.	Chain drives, chain length, classification of chains