SAMANTA CHANDRASEKHAR INSTITUTE OF TECHNOLOGY & MANAGEMENT

SEMILIGUDA-763008, KORAPUT

DEPT. OF... MECHANICAL ENGINEERING

LESSON PLAN AND PROGESS REGISTER

(To be maintained by all members of the teaching staff)

SESSION..... 2023 : 2024 ..... (O)

Diploma 3rd & 5th Sem.

NAME LAXMIKANT BIDIKA

DESIGNATION SENIOR LECTURER

DEPT. MECHANICAL ENGINEERING

SIGNATURE

This Lesson Plan and Progress Register is to be submitted to the Director for verification and counter signature twice in every semester. The H.O.D. must verify and sign this Register before submission.

COURSES ALLOTED

FOR DIFFERENT BRANCHES & SEMESTER (Degree/Diploma/+2 Science)

Semister	Course No.	Course Title
5th	TH3	Hydraulic Machines & Industrial fluid Power
3rd	TH1	Production Technology

N.B. : Submission of Annual Lession Plan-cum-Progress Register and performance Report for Assessment are responsibility of each faculty member.

LESSON PLAN Degree/Diploma/+2 Science (Theory/Pract/Lab/Workshop)

Semester 5TH Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
	TH3 (10)	HYDRAULIC TURBINE	
11H&3	1.1	Definition and classification of hydraulic turbine	(2)
2/H23, 5/H23 & 7/H23	1.2	Construction and working principle of impulse turbine	(3)
9/H23, 12/H23	1.3	Velocity diagram of moving blades, work done and	(2)
		derivation of various efficiency of impulse turbine	
14/H23 16/H23	1.4	velocity diagram of moving blades, work done and	(2)
		derivation of various efficiency of Francis turbine	
19/H23 21/H23	1.5	velocity diagram of moving blades, work done and derivation	(2)
		of various efficiency of Kaplan turbine	
23/H23 25/H23	1.6	Numerical on above	(2)
28/H23 30/H23	1.7	Distinguish between impulse	(2)
		and reaction turbine.	
	(2.0)	CENTRIFUGAL PUMPS	
4/9/23 5/9/23	2.1	Construction and working principle of centrifugal	(2)
		pumps.	

LESSON PLAN Degree/Diploma/+2 Science (Theory/Pract/Lab/Workshop)

Semester 5th Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
9/9/23 11/9/23	2.2	Work done and derivation of various efficiencies	(2)
		of centrifugal pump.	
12/9/23	2.3	Numerical on above.	(1)
	(3.0)	RECIPROCATING PUMPS	
13/9/23 16/9/23	3.1	Describe construction and ompn; working of single acting reciprocating pump.	(2)
16/9/23 18/9/23	3.2	Describe the construction & ompn, working of double acting reciprocating pump	(2)
23/9/23 25/9/23	3.3	Derive the formula for power required to drive the pump (single acting & ompn; double acting)	(2)
28/9/23	3.4	Define slip	(1)
27/9/23 30/9/23	3.5	State positive & ompn; negative slip & ompn. establish relation between slip and coefficient of discharge.	(2)
3/10/23	3.6	Solve numerical on above	(1)

LESSON PLAN

Degree/Diploma/+2 Science
(Theory/Pract/Lab/Workshop)

Semester 5th Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
	4.0	PNEUMATIC CONTROL SYSTEM	
4/10/23 5/10/23	4.1	Elements - filter regulator lubrication unit.	(2)
	4.2	Pressure control valves	
9/10/23 10/10/23	4.2.1	Pressure relief valves	(2)
11/10/23 14/10/23	4.2.2	Pressure regulation valves	(2)
	4.3	Direction control valves	
16/10/23 17/10/23	4.3.1	3/2 DCV, 5/2 DCV, 5/3 DCV	(2)
18/10/23 21/10/23	4.3.2	Flow control valves	(2)
30/10/23 31/10/23	4.3.3	Throttle valves	(2)
1/11/23 4/11/23	4.4.	ISO symbols of pneumatic components.	(2)
	4.5	Pneumatic circuits	
6/11/23 7/11/23	4.5.1	Direct control of single acting cylinder	(2)
11/11/23 14/11/23	4.5.2	operation of double acting cylinder	(2)
15/11/23 18/11/23	4.5.3	operation of double acting cylinder with metering in & metering out control.	(2)

LESSON PLAN

Degree/Diploma/+2 Science
(Theory/Pract/Lab/Workshop)

Semester S[illegible] Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
	(5.0)	HYDRAULIC CONTROL SYSTEM	
20/11/23	5.1	Hydraulic system, its merits and demerits.	(1)
	5.2	Hydraulic accomulators	
21/11/23	5.2.1	Pressure control valves.	(1)
22/11/23	5.2.2	Pressure relief valves	(1)
25/11/23	5.2.3	Pressure regulation valves	(1)
	5.3	~~Hydd power pumps~~ Direction control valves	
28/11/23	5.3.1	3/2 DCV, 5/2 DCV, 5/3 DCV	(1)
29/11/23	5.3.2	Flow control valves	(1)
2/12/23	5.3.3	throttle valves	(1)
	5.4	Hydd Power pumps	
4/12/23	5.4.1	External and internal gear pumps	(1)
9/12/23	5.4.2	Vane Pumps	(1)
11/12/23	5.4.3	Radial piston pumps	(1)

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Degree/Diploma/+2 Science
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Semester 5th Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
12/12/23	5.5	ISO symbols for hydraulic components.	(1)
13/12/23	5.6	Actuators	(1)
	5.7	Hydraulic circuits	
14/12/23 15/12/23	5.7.1	Direct control of single acting cylinder	(2)
16/12/23 18/12/23	5.7.2	operation of double acting cylinder	(2)
19/12/23	5.7.3	operation of double acting cylinder with metering in and metering out.	(2)
20/12/23	5.8	Comparison of hydraulic & pneumatic system.	(2)

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Degree/Diploma/+2 Science
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Semester 3rd Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
	TH (1.0)	METAL FORMING PROCESS	
14/8/23	1.1	Extrusion. Definition & classification	(1)
16/8/23 14/8/23	1.2	Explain direct & indirect & impact extrusion process.	(2)
19/8/23	1.3	Define rolling. classify it.	(1)
21/8/23	1.4	Difference between cold rolling & hot rolling proces	(1)
24/8/23 23/8/23	1.5	List of different types of rolling mill used in	(2)
		Rolling process.	
	(2.0)	WELDING	
25/8/23 28/8/23	2.1	Define welding and classify various welding processes.	(2)
28/8/23	2.2	Explain gases used in welding.	(1)
29/8/23 1/9/23	2.3	Explain oxy-acetylene welding process:	(2)
2/9/23 4/9/23	2.4	Explain various types of flames used in oxy-acetylene	(2)
		welding process.	
5/9/23	2.5	Explain Arc welding process.	(1)
8/9/23	2.6	Specify arc welding electrodes.	(1)

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Degree/Diploma/+2 Science
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Semester 3rd Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
9/9/23	2.7	Define resistance welding & classify it.	1
	2.8	Describe various resistance welding processes such as	
11/9/23 12/9/23		butt welding, spot welding flash welding, projection	2
		welding & seam welding.	
13/9/23 15/9/23	2.9	Explain TIG and MIG welding process	2
16/9/23 18/9/23	2.10	State different welding defects with causes	2
		and remedies	
	3.0	<u>Casting</u>	
22/9/23 23/9/23	3.1	Define casting and classify the various	2
		casting processes	
25/9/23 26/9/23	3.2	Explain the procedure of sand mould casting	2
	3.3	Explain different types of molding sands with	
27/9/23 30/9/23		their composition and properties	2
3/10/23	3.4	classify different pattern & state	
4/10/23		various pattern allowance	2

LESSON PLAN

Degree/Diploma/+2 Science
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Semester 3rd Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
6/10/23	3.5	classify core	1
7/10/23 9/10/23	3.6	Describe construction & working of cupola and	2
		crucible furnace.	
10/10/23	3.7	Explain die casting method.	1
	3.8	Explain centrifugal casting such as true centrifugal	
11/10/23 13/10/23		casting, centrifuging with advantages, limitation	2
		and area of application	
14/10/23 16/10/23	3.9	Explain various casting defects with their	2
		causes & remedies.	
	4.0	POWDER METALLURGY	
17/10/23	4.1	Define powder metallurgy process.	1
18/10/23 20/10/23	4.2	State advantages of powder metallurgy technology	2
		technique.	
28/10/23 30/10/23	4.3	Describe the methods of producing components by	2
		powder metallurgy technique.	

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Semester 3rd Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
31/10/23	4.4	Explain sintering	①
1/11/23	4.5	Economic of powder metallurgy.	①
	⑤.0	Press Work	
3/11/23 4/11/23	5.1	Describe press work, blanking, piercing &	②
		trimming.	
6/11/23	5.2	List various types of die & punch.	①
7/11/23 9/11/23	5.3	Explain simple, compound and progressive dies.	②
10/11/23 11/11/23	5.4	Describe the various advantages & disadvantages	②
		of above dies.	
	⑥.0	JIGS & FIXTURES	
14/11/23	6.1	Define jigs & fixtures	①
15/11/23	6.2	State advantages of using jigs & fixtures	①
17/11/23 18/11/23	6.3	State the principle of locations.	②
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Semester 3rd Branch Mechanical Engineering

Month & Date	Course No. & Title	Brief note of the topics to be covered	No. of Classes Required
20/11/23 21/11/23	6.4	Describe the methods of location with respect to;	(2)
		3-2-1 point of location of rectangular jig.	
22/11/23	6.5	List of various jigs & fixtures.	(1)