

Lecture Plan for Mechatronics (IEME-024)

Faculty : Shrish Bajpai

Section : Pre Final Year (ME)

Web Page : <http://sbajpai.yolasite.com/>

Lecture	Topic	Reference Book
1.	Introduction to Mechatronics	1
2.	Mechatronics & associated key elements	1
3.	Semiconductor theory & PN junction-I	1
4.	Semiconductor theory & PN junction-II	1
5.	Zener diode, Tunnel diode & Schottky diode-I	1
6.	Zener diode, Tunnel diode & Schottky diode-II	1
7.	Power Supplies & active component	1
8.	Mathematical problems associated with Unit-I	1
9.	Number System, Minimization of Boolean expressions & Timing diagrams	1
10.	Adder, Subtractor, Multiplexer & associated mathematical problems	1
11.	Demultiplexer, Decoder & Encoder & associated mathematical problems	1
12.	Flip Flop-I	1
13.	Flip Flop-II	1
14.	Sequential Counters	1
15.	Analog Electronics-I	1
16.	Analog Electronics-II	1
17.	Mathematical problems associated with Unit-II	1
18.	Sensor-I	1
19.	Sensor-II	1
20.	Sensor-III	1
21.	Moving iron transducer, Solenoids & Servo motor-I	1
22.	Moving iron transducer, Solenoids & Servo motor-II	1
23.	Kinematics chain, Gears & Cam mechanism-I	1
24.	Kinematics chain, Gears & Cam mechanism-II	1
25.	Different type of clutches	1
26.	Introduction to Control Theory, Modeling in frequency & time domain & Transfer function	1
27.	System response, zero, first & second order system & associated mathematical problems	1
28.	Routh Hurwitz & Stability criterion	1
29.	Root locus-I	1
30.	Root locus-II	1

31.	Bode plot-I	1
32.	Bode plot-II	1
33.	Types of robot, Robotic arm terminology, Robotic arm configuration & Robot system	1
34.	Robotic manipulation kinematics, Robotic arm positioning concepts & Robotic arm path planning	1
35.	Introduction to reliability & reliability system-I	1
36.	Introduction to reliability & reliability system-II	1

Text Book :

1. Godfrey Onwubolu, "Mechatronics : Principle & Application", India Reprint, Reed Elsewire India Private Limited, ISBN : 9788131205235.