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**Salahaddin University-Erbil**

**College of Engineering**

**Department of Mechanical & Mechatronics Engineering**

**Subject: Electrical Machine**

**Course Book and Weekly Plan**

**Lecturer's name: Wafeeq Shaia Hanna**

**Academic Year: Fall Semester-2022**

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| **17. The Topics: Weekly Plan – Fall Semester 2022**   |  |  |  | | --- | --- | --- | | **Subject Details** | | **Week No.** | | **Practical Part** | **Theoretical Part** | | Parted the students to Groups and  Sub- Groups | Registration of the semester  The Construction of D.C machine, D.C winding,  Magnetization curve. | 11/09/2022  Week 1 | | Explain the first New Set of  Experiments | Armature Reaction. Internal generated  Voltage and Induced Torque. | Week 2 | | Run the First New Set of  Experiments  Group (1)-Exp. No 1: Measurement of  a)Armature Circuit .  b)Field Circuit.  Group (2) Exp. No 2: D.C Shunt Motor  Running & Reversing.  Group (3) - Discussion. | Power flow and losses. Voltage Regulation. | Week 3 | | Run the First New Set of  Experiments  Group (1)-Exp. No 2: D.C Shunt Motor  Running & Reversing.  Group (2): Discussion  Group (3)-Exp. No 1: Measurement of  a) Armature Circuit.  b) Field Circuit. | D.C Generator:  Introduction. Characteristics. Equivalent circuit. | Week 4 | | Run the First New Set of  Experiments  Group (1)- Discussion  Group (2) Exp. No 1: Measurement of  a) Armature Circuit.  b) Field Circuit.  Group (3)-Exp. No 2: D.C Shunt Motor  Running & Reversing. | Types of D.C Generator(Separately Excited, Self- Excited Shunt Generator  Self- Excited Series Generator | Week 5 | | Explain the Second New Set of  Experiments | Compound D.C Generator.  Applications of D.C Generators | Week 6 | | Run the Second New Set of  Experiments.  Group (1)-Exp. No 3:  Group (2)-Exp. No 4:  Group (3)-Discussion. | D.C Motor  Equivalent circuit. Mechanical power and Torque. Armature Speed control.  Types of D.C MOTOR:  Separately Excited, Self- Excited Shunt Motor. | Week 7 | | Run the Second New Set of  Experiments.  Group (1)-Exp. No 4:  Group (2) - Discussion.  Group (3) - Exp. No 3: | Speed control of permanent Magnet D.C Motor | Week 8 | | Run the Second New Set of  Experiments.  Group (1) - Discussion.  Group (2)-Exp. No 3:  Group (3) - Exp. No 4: | Series D.C Motor  Compound D.C Motor | Week 9 | | Students review for check all the electrical connections of Experiments. | Transformers  Introduction. Voltage induced in a coil  Ideal Transformers  Impedance Transformation | And 10 | | Term Exam. in the Lab | Practical Transformers  Exact and approximate equivalent | And 11 | |  | Tests on Transformers | Week 12 | |  | Final Semester Exam | 10/12/2022 | |