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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**

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| **Subject Details** | **Week No.** |
| **Practical Part** | **Theoretical Part** |
| Parted the students to Groups and Sub- Groups  | Registration of the semesterThe Construction of D.C machine, D.C winding, Magnetization curve. | 11/09/2022Week 1 |
| Explain the first New Set ofExperiments  | Armature Reaction. Internal generatedVoltage and Induced Torque. | Week 2 |
| Run the First New Set ofExperimentsGroup (1)-Exp. No 1: Measurement ofa)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 ofExperimentsGroup (1)-Exp. No 2: D.C Shunt Motor Running & Reversing.Group (2): DiscussionGroup (3)-Exp. No 1: Measurement ofa) Armature Circuit.b) Field Circuit.  | D.C Generator:Introduction. Characteristics. Equivalent circuit. | Week 4 |
| Run the First New Set ofExperimentsGroup (1)- DiscussionGroup (2) Exp. No 1: Measurement ofa) 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 GeneratorSelf- Excited Series Generator | Week 5 |
| Explain the Second New Set ofExperiments | Compound D.C Generator.Applications of D.C Generators | Week 6 |
| Run the Second New Set ofExperiments.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 ofExperiments.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 MotorCompound D.C Motor | Week 9 |
| Students review for check all the electrical connections of Experiments. | TransformersIntroduction. Voltage induced in a coilIdeal TransformersImpedance Transformation  | And 10 |
| Term Exam. in the Lab | Practical TransformersExact and approximate equivalent   | And 11 |
|  | Tests on Transformers | Week 12 |
|  | Final Semester Exam | 10/12/2022 |

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