**Course description form**

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| 1. **Course Name** | | | | | | | | |
| ***Machines (Transformers)II*** | | | | | | | | |
| 1. **Course Code** | | | | | | | | |
| EP208 | | | | | | | | |
| 1. **Semester/Year** | | | | | | | | |
| 2n’d Semester/Second Year | | | | | | | | |
| 1. **The date this description was prepared** | | | | | | | | |
| 17 / 9 / 2023 | | | | | | | | |
| 1. **Available forms of attendance** | | | | | | | | |
| Face-to-Face theoretical lectures | | | | | | | | |
| 1. **Number of study hours (total) / number of units (total)** | | | | | | | | |
| 60/3 | | | | | | | | |
| 1. **Name of the course administrator** | | | | | | | | |
| Name: Lect. Mayyadah Sahib Ibrahim Email:[mayyadah.sahib@uodiyala.edu.iq](mailto:mayyadah.sahib@uodiyala.edu.iq) | | | | | | | | |
| 1. **Course objectives** | | | | | | | | |
| Study the basic principles of transformers.  Qualifying students to be able to become familiar with the theoretical and scientific aspects of transformers  Study the types of transformers, their types, working principles, properties and applications, and explain the importance of their uses in practical life.  Urging students to benefit from the course in their field of work as engineers in the field of electrical power engineering in the future | | | | **Objectives of the study subject** | | | | |
| 1. Solution of non-linear equations and root findings. | | | | | | | | |
| Weekly lectures included providing students with the basics and topics  related to the pre-skills education outcomes to solve practical problems through presentation, lecture, or conducting experiments.  Solve a group of practical and applied examples by faculty members.  Through discussion, students participate in solving some practical problems.  Practical laboratories in the department are monitored by faculty members in the department | | | **The Strategy** | | | | | |
| 1. Numerical integration and differentiation. | | | | | | | | |
| Interpolation and solving differential equations. | **Learning method** | **Required learning outcomes** | | | | **Name of the unit or topic** | **Hours** | **Week** |
| Daily, oral, monthly, written examinations and reports | Lectures Notes  PDF  power point  Video | Construction of transformers and type of transformers and type winding | | | | The student learns introduction to Construction transformers | 6 | Week 1 to Week 2 |
| Daily, oral, monthly, written examinations and reports | Lectures Notes  PDF  power point  Video | Principle working of transformers  e.m.f equation of transformers | | | | The student learns E.m.f equation of transformers | 10 | Week 3 to Week 5 |
| Daily, oral, monthly, written examinations and reports | Lectures Notes  PDF  power point  Video | Ideal transformers Ideal transformers on load and no load  Practical transformers on no load | | | | The student learns Type of ideal transformers and Practical | 10 | Week 6 to Week 8 |
| Daily, oral, monthly, written examinations and reports | Lectures Notes  PDF  power point  Video | Loss in transformers  Condition for maximum efficiency  All day efficiency | | | | Learn the Loss in transformers and efficiency Condition for Maximum Efficiency | 10 | Week 9to Week 10 |
| Daily, oral, monthly, written examinations and reports | Lectures Notes  PDF  power point  Video | Three phase transformers and connection  Advantages of three transformers  - Three phase with two single phase transformers | | | | To learn Equivalent circuit of transformers  Voltage regulation  Transformers tests | 10 | Week 11to Week 14 |
| Daily, oral, monthly, written examinations and reports | Lectures Notes  PDF  power point  Video | Auto transformers  Power transformers  Advantages and disadvantages of auto transformers | | | | The student learns Auto transformers  Power transformers  Advantages and disadvantages of auto transformers | 4 | Week 15 |
| 1. **Course Evaluation** | | | | | | | | |
| Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc. | | | | | | | | |
| 1. **Learning and teaching resources** | | | | | | | | |
| Electrical Technology By B.L Theraja. | | | | | Required textbooks (methodology, if any) | | | |
| 1.Principle of Electrical Machines Machines V.K. MEHTA  2. Electrical Machines U.A. Bakshi V.U. klBakshi | | | | | Main references (sources) | | | |
| All scientific journals that are relevant to the broad concept of DC machines | | | | | Recommended supporting books and references (scientific journals, reports....) | | | |
| Peruse scientific websites for recent developments in the prescribed article | | | | | Electronic references, Internet sites | | | |