

ACADEMIC SESSION: 2025-26

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| Discipline: Electrical engineering | Semester : 4th | Name of the Teaching Faculty: 1. Kiran Kumar Bhoi (Lect stage II) 2. Radhika Murmu (Lab Asst.) |
| Subject: AC Machines and special electrical machines lab | No. of days / week class allotted | Semester From date: 22/12/2025 to 18/04/2026 Nos. of Weeks per semester: 15 |
| Week | Class Day | Theory Topics |
| 1 ST | 1 st | Identify and acquaint with machines and equipment of laboratory. |
| | 2 nd | Identify and acquaint with machines and equipment of laboratory. |
| 2 ND | 1 st | Overall discussion about experiment conduct, safety and evaluation process. |
| | 2 nd | Know the safety precaution |
| 3 RD | 1 st | Identify the different parts (along with function and materials) for the given single phase and three phase induction motor. |
| | 2 nd | Connect and run the three-phase squirrel cage induction motors (in both directions) using the DOL starter. |
| 4 TH | 1 st | Continue of previous class experiment followed by evaluation. |
| | 2 nd | Connect and run the three-phase squirrel cage induction motors using the star-delta starter. |
| 5 TH | 1 st | Continue of previous class experiment followed by evaluation. |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 6 TH | 1 st | Perform the direct load test on the three phase squirrel cage induction motor and plot the i) efficiency versus output, ii) power factor versus output, iii) power factor versus motor current and iv) torque – slip/speed characteristics |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 7 TH | 1 st | Conduct the No-load and Blocked-rotor tests on given 3-f squirrel cage induction motor and determine the equivalent circuit parameters. |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 8 TH | 1 st | Control the speed of the given three phase squirrel cage/slip ring induction motor using the applicable methods: i) auto-transformer, ii) VVVF. |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 9 TH | 1 st | Conduct the direct load test to determine the efficiency and speed regulation for different loads on the given single phase induction motor; plot the efficiency and speed regulation curves with respect to the output power. |

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| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 10 TH | 1 st | Perform the direct loading test on the given three-phase alternator and determine the regulation and efficiency |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 11 TH | 1 st | Determine the regulation and efficiency of the given three phase alternator from OC and SC tests (Synchronous impedance method) |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 12 th | 1 st | Conduct the test on load or no load to plot the 'V' curves and inverted 'V' curves (at no-load) of 3-f synchronous motor. |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 13 th | 1 st | Dismantling and reassembling of single-phase motors used for ceiling fans, universal motor for mixer. |
| | 2 nd | Continue of previous class experiment followed by evaluation. |
| 14 th | 1 st | Experiment conduction for defaulters. |
| | 2 nd | Experiment conduction for defaulters. |
| 15 th | 1 st | Experiment conduction for defaulters. |
| | 2 nd | Experiment conduction for defaulters. |

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