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|  | **Lesson Plan** | | | | | | |  |
| **Name of Naculty** | | | Sh. Navneet Kaushik | | | |
| **Discipline** | | | Electrical Engineering | | | |
| **Semester** | | | 6th | | | |
| **Subject** | | | Electrical Power-II | | | |
| **Lesson Plan Duration** | | | 15 week(From Feb to June 2024) Theory : 04,Practical:03 | | | |
| **Week** | **Theory** | | | **Practical** | | |
|  | | **Lecture**  **Day** | **Topic (including Assignment/ Test)** | | | **Practical**  **Day** | **Topic** | |
| 1st | | Day 1 | **Unit1: Faults; Introduction** | | | Day1 | Testing of the dielectric strength of transformer oil and air | |
| Day2 | Common type of faults in both overhead and  underground systems | | |
| Day 3 | symmetrical/ Unsymmetrical faults | | |
| Day 4 | Single line to ground fault | | |
| 2nd | | Day 1 | double line to ground fault, 3-phasa to Ground  fault open circuit | | | Day1 | Study of different types of circuit breakers and isolators | |
| Day2 | Simple problems relating to fault finding. | | |
| Day 3 | Revision of important topics | | |
| Day 4 | Assignment / Class test | | |
| 3rd | | Day 1 | **2 Switch Gears:** Purpose of protective gear. Difference between switch, isolator and circuit  breakers | | | Day1 | Revision/ file checking | |
| Day2 | Function of isolator and circuit breaker. Making  capacity and breaking | | |
| Day 3 | capacity of circuit breaker (only definition) | | |
| Day 4 | 2.2 Circuit breakers. Types of circuit breakers, bulk and minimum oil circuit breakers, | | |
| 4th | | Day 1 | air SF6 circuit breakers | | | Day1 | Plot the time currant characteristics of over currant relay | |
| Day2 | 2.3 Principles of Arc extinction blast circuit  breakers in OCB and ACB, Constructional | | |
| Day 3 | features of OCB, ACB, and their working | | |
| Day 4 | Method of arc extinction | | |
| 5th | | Day 1 | 2.4 Miniature circuit breakers MCB, MCCB | | | Day1 | Power measurement by using CTs and PTs | |
| Day2 | ELCB, for distribution and transmission system (Descriptive) | | |
| Day 3 | Revision of important topics | | |
| Day 4 | Assignment / Class test | | |
| 6th | | Day 1 | **3 Protection devices**: Fuses; function of fuse. | | | Day1 | Revision/ file checking | |
| Day2 | Types of fuses HV and LV fuses, | | |
| Day 3 | rewire able, cartridge, HRC | | |
| Day 4 | **3.2 Earthing**: purpose of earthing, method of earthing | | |
| 7th | | Day 1 | Equipment earthing, Substation earthing, | | | Day1 | Earthing of different equipment/Main Distribution Board and Energy Meter Box | |
| Day2 | System earthing as par Indian Electricity rules.  Methods of reducing earth resistance. | | |
| Day 3 | **3.3 Relays**: a) Introduction - types of relays | | |
| Day 4 | Electromagnetic and thermal relays, their | | |
| 8th | | Day 1 | construction and working | | | Day1 | Perform the overload and short circuit test of MCB as  par IS specifications | |
| Day2 | b) Induction type over-currant, earth fault relays | | |
| Day 3 | instantaneous over currant | | |

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|  | Day 4 | Directional over-current, differential relays, their functions | Day1 |  |
| 9th | Day 1 | d) Distance relays, their functions | Day1 | Revision/ file checking |
| Day2 | e) Idea of static relays and their applications |
| Day 3 | Revision of important topics |
| Day 4 | Assignment / Class test |
| 10th | Day 1 | **4 Protection Scheme :** introduction | Day1 | Plot the time-current characteristics of Kit-Kat fuse wire |
| Day2 | Relays for generator protection |
| Day 3 | 4.2 Relays for transformer protection including Bucholz relay protection |
| Day 4 | 4.3 Protection of feeders and bus bars |
| 11th | Day 1 | Over current and earth fault protection. | Day1 | Taking reading of current on any LT line with clip on meter |
| Day2 | 4.4 Distance protection for transmission system |
| Day 3 | 4.5 Relays for motor protection |
| Day 4 | Relays for generator protection |
| 12th | Day 1 | Revision of important topics |
| Day2 | Assignment / Class test | Day1 | Revision/ file checking |
| Day 3 | **5 Over-voltage Protection :** Protection of  system against over voltages |
| Day 4 | causes of over voltages, utility of ground wire |
| 13th | Day 1 | 5.2 Lightning arrestors, rod gap | Day1 | Revision/ file checking |
| Day2 | Horn gap, metal oxide type. |
| Day 3 | 5.3 Transmission Line protection against over- voltages and lightning |
| Day 4 | substation protection against over-voltages and  lightning |
| 14th | Day 1 | Revision of important topics | Day1 | Quiz /viva-voice related to electrical machine |
| Day2 | Assignment / Class test |
| Day 3 | **6:Concept of Tariffs** |
|  | Day 4 | 6.2 Block rate, flat rate |  | |
| 15th | Day 1 | maximum demand and two part tariffs | Day1 | Quiz /viva-voice related to electrical machine |
| Day2 | 6.3 Simple problems |
| Day 3 | Assignment / Class test |
| Day 4 | Problem solution/ test check |