

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI**

| COURSE OUTLINE TEMPLATE | | | | | | | | | | | | | | | | |
|--|--|--|----------------------|---|---------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| Course Title | POWER SYSTEM ANALYSIS | | | | | | | | | | | | | | | |
| Course Code | EEPC25 | No. of Credits | | 04 | | | | | | | | | | | | |
| Department | EEE (A Section) | Faculty | | M Jaya Bharata Reddy | | | | | | | | | | | | |
| Pre-requisites Course Code | MAIR42, EEPC16 | | | | | | | | | | | | | | | |
| Course Coordinator(s) (if, applicable) | --- | | | | | | | | | | | | | | | |
| Other Course Teacher(s)/Tutor(s) E-mail | --- | | Telephone No. | | 0431-2503270 | | | | | | | | | | | |
| Course Type | <input checked="" type="checkbox"/> Core course | | | <input type="checkbox"/> Elective course | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| COURSE OVERVIEW | | | | | | | | | | | | | | | | |
| Students are exposed to model the various power system components and analyze the performance of the power system under different power system disturbances. | | | | | | | | | | | | | | | | |
| COURSE OBJECTIVES | | | | | | | | | | | | | | | | |
| To model various power system components and carry out load flow, short circuit and stability studies. | | | | | | | | | | | | | | | | |
| COURSE OUTCOMES (CO) | | | | | | | | | | | | | | | | |
| Course Outcomes | | Aligned Programme Outcomes (PO) | | | | | | | | | | | | | | |
| Upon completion of the course, the students will be able to 1. Carry out load flow study of a practical system. 2. Simulate and analyze fault. 3. Study the stability of power systems. | | CO no. | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PO 13 | PO 14 |
| | | 1 | H | H | NA | NA | H | NA | M | H | H | H | M | H | M | M |
| | | 2 | H | H | NA | NA | H | NA | M | H | H | H | M | H | M | M |
| | | 3 | H | H | NA | NA | H | NA | M | H | H | H | M | H | M | M |

COURSE TEACHING AND LEARNING ACTIVITIES

| S.No. | Week | Topic | Mode of Delivery |
|-------|---|--|-----------------------|
| 1 | Weeks 1 to 3 (10 contact hours, including four contact hours for problem solving) | Modelling of power system components. | Lecture/Tutorial |
| 2 | | Numerical examples/Problem solving | Group work (exercise) |
| 3 | Weeks 4 to 6 (10 contact hours, including four contact hours for problem solving) | Power flow analysis methods | Lecture/Tutorial |
| 4 | | Numerical examples/Problem solving | Group work (exercise) |
| 5 | Weeks 7 to 9 (10 contact hours, including four contact hours for problem solving) | Fault studies (Symmetrical fault analysis) | Lecture/Tutorial |
| 6 | | Numerical examples/Problem solving | Group work (exercise) |
| 7 | Weeks 10 to 12 (10 contact hours, including four contact hours for problem solving) | Fault analysis (Unsymmetrical fault analysis) | Lecture/Tutorial |
| 8 | | Numerical examples/Problem solving | Group work (exercise) |
| 9 | Weeks 13 to 15 (10 contact hours, including four contact hours for problem solving) | Stability studies | Lecture/Tutorial |
| 10 | | Numerical examples/Problem solving | Group work (exercise) |

Mode of Assessment

| S.No. | Mode of Assessment | Week/Date | Duration | % Weightage |
|-------|---|---|---|----------------|
| 1 | 1 st Mid Semester Examination (Written test) (1 st and 2 nd Units) | 6 th Week | 60 Minutes | 20 |
| 2 | 2 nd Mid Semester Examination (Written test) (3 rd and 4 th Units) | 12 th Week | 60 Minutes | 20 |
| 3 | Take Home / Team Task | 3 rd to 13 ^h week | Work will be carried out along with the course | 10 |
| 4 | Retest (Written Test) (1 st to 4 th Unit) | 14 th week | 60 Minutes | 20 |
| 5 | End Semester Examination (Written test) | 16 th week | 180 Minutes | 50 |

Note:

1. Attending all the assessments (Assessment 1-3 and 5) are **MANDATORY** for every student.
2. If any student is not able to attend Assessment-1 (1st Mid Sem) / Assessment-2 (2nd Mid Sem) due to genuine reason, student is permitted to attend the Assessment- 4 (retest) with 20% weightage (20 marks).
3. In any case, retest will not be considered as an improvement test.
4. Relative grading will be based on the clusters (range) of the total marks (mid exams, team task, semester examination etc. put together for each student) scored for grading by adopting Gap theory/Normalized curve. Letter grades, minimum pass marks and the corresponding grade points will be as per institute norms.

ESSENTIAL READINGS :

1. John .J. Grainger & Stevenson.W.D., 'Power System Analysis', McGraw Hill, 1 st Edition, 2003.
2. D P Kothari, I J Nagrath 'Modern Power System Analysis', 3rd Edition, 2011.
3. Hadi Saadat, 'Power System Analysis ', Tata McGraw-Hill Education, 2nd Edition, 2002.

COURSE EXIT SURVEY

Shall be obtained at the end of the course

COURSE POLICY**ATTENDANCE**

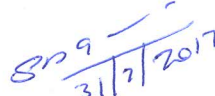
1. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum 75 % physical attendance in these contact hours to attend the end semester examination.
2. Any student, who fails to maintain 75% attendance need to appear for the retest. Student who scores more than 50 % marks in the retest will be eligible for attending the end semester examination.
3. Students not having 75% minimum attendance at the end of the semester and also fail in retest (scoring less than 50%) will have to RE-DO the course.


ACADEMIC HONESTY & PLAGIARISM

1. Copying in any form during assessments is considered as academic dishonesty and will attract suitable penalty.

FOR APPROVAL


Course Faculty _____


CC-Chairperson _____


HOD _____