

# KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

## Department of Electrical Engineering

### EE-463 Power System Analysis Course syllabus 131

**Dr. Ibrahim Omar Habiballah**

| OFFICE  | PHONE | OFFICE HOURS  | E-MAIL   |
|---------|-------|---|--|
| 59-2080 | 4985  | MTW 11:00-11:45 am<br>MW 12:20-12:40 pm (up to Oct. 9 <sup>th</sup> ) | <a href="mailto:ibrahimh@kfupm.edu.sa">ibrahimh@kfupm.edu.sa</a> |

**Course Timing:** MW 12:45 - 2:00 pm (up to Oct. 9<sup>th</sup>); MW 12:25 – 1:40 pm (starting Oct. 21<sup>st</sup>)

**Course Location:** 59-1016

**Textbook:** Power System Analysis, by **Hadi Saadat**, McGraw Hill WCB, 3<sup>rd</sup> ed., 2010

| Chapters | No. of Weekes | Topics  | Home Work Problems<br>(Plus Extra Assignments) |
|----------|---------------|---|--|
| 2-3, 5   | 2             | Basic Concepts; (Chapter 2, 3.2, 3.6, 5.2, 5.3)<br>Per-Unit System ( 3.13,3.14) | 2.3,2.5,2.15<br>3.11,3.13,3.15                 |
| 6        | 4             | Power Flow Analysis (6.1-6.10)  | 6.1, 6.7, 6.12                                 |
| 9        | 2             | Balanced Fault (9.1-9.6)  | 9.2, 9.4, 9.6                                  |
| 10       | 4             | Symmetrical Components and Unbalanced Fault (10.1-10.9)                         | 10.1, 10.9, 10.13, 10.16                       |
| 11       | 2             | Stability (11.1-11.6)   | 11.5, 11.7                                     |
|          | 1             | Project Presentations   |  |

#### Grading:

|  |   |              |
|--|---|--------------|
| Home Work, Quizzes, and Attendance                           | : | 15 (5, 8, 2) |
| <b>Major-Exam I 25<sup>th</sup> October (6:00-8:00 pm)</b>   | : | 15           |
| <b>Major-Exam II 12<sup>th</sup> November (6:00-8:00 pm)</b> | : | 15           |
| Project  | : | 20           |
| Final Exam   | : | 35           |

Each student should work all home work problems and the extra assignments assigned by the instructor on an individual basis; some of these problems may be taken at random for grading. A grade of zero will be given for any problem turned in late unless excused in advance. There will be a quiz related to each home work.

#### Project:

The term project is to simulate analysis and planning cases for a practical power system. The details of the project will be elaborated by the instructor. Each student must submit his written individual report before the end of the semester. Each student's performance is evaluated based on the submitted report; on his case analysis results and based on his oral presentation at the end of the semester. Each student will be asked to defend his work individually.