

**FLORIDA INTERNATIONAL UNIVERSITY
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
EEL-6261 POWER SYSTEMS ENGINEERING
Spring SEMESTER 2018**

INFORMATION SHEET AND COURSE TOPICS

COURSE INSTRUCTOR:

Professor Osama A. Mohammed, Ph.D., Fellow IEEE
Department of Electrical & Computer Engineering
10555 W. Flagler Street, Room EC-3983
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Miami, Florida 33174
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CLASS TIMES: Fridays: 5:00-7:30PM Room EC 1116

OFFICE HOURS: Friday 4:00 noon-5:00 PM in EC-3983 or by special arrangements with Professor Mohammed.

PRE-REQUISITE: EEL-4214/15 or permission of instructor

CREDIT HOURS: 3 Hours

TEXT BOOK AND NOTES and SOFTWARE:

1. Power Systems Generation, Operation and Control by Allen J. Wood, Bruce F. Wollenberg, Gerald B. Sheblé 3rd edition, Wiley,
2. Selected lecture notes and other demonstration material and examples will be made available as authored by Professor Mohammed.
3. Software package will be made available to students. Also, other downloadable programs and other material pointers will be made available under the virtual office area.

Who Should Take This Course:

- FIU Electrical and Computer Engineering Graduate/Advanced Students
- Graduate or Advanced Students at other Universities in Florida or out of State
- Engineers and technical personnel in Industry preparing for Engineering License
- Engineers and technical staff who want to keep current and reach a deep understanding of Power System Operation, Generation and Control concepts.
- Electric Utility managers and supervisors looking for continued training.
- Engineering contractors and consultants for familiarities with electric utility operation

Catalogue Data: EEL-6261 Power Systems engineering (3 credit hours). Power systems operations topics including, power flow, economic operations, environmental dispatch, demand and supply side management, security analysis, state estimation and s, fault studies, load flow, and on-line control.

Practical applications and projects. Prerequisite: Permission of instructor.

Course topics:

- Review of Power System equipment models, power flow
- Characteristics of power generation units.
- Economic dispatch of thermal units, loss inclusion, methods of solution... a deeper look
- Environmental dispatch
- Unit commitment, solution techniques, recent advances.
- Generation with limited energy supply
- Energy production cost models for fuel budgeting and planning
- Control of generation and interchange evaluation
- Power Systems Security Analysis
- State Estimation.
- Practical applications

ASSISTANCE: Please try to see Dr. Mohammed during his listed office hours If this proves impossible, a personal appointment should be arranged by calling the above phone number or the ECE department secretary at phone number(305-348-2807).

ABSENCE: Class attendance is very important and is considered in your overall performance in the course. Students are responsible for all material covered in that class.

IMPORTANT RULE: Students are encouraged to discuss the course topics with the professor and with each other. Any work submitted (Homework, Tests, projects, etc.) should be pledged and signed as the students' own work, and that there is no any unauthorized help was obtained. Violators will be subject to academic misconduct, which might lead to dismissal from the university.

GRADING POLICY:

Your Grade will be calculated as Follows:

Homework	10%
Mid-term	25%
Project/Case studies	25%
Final Exam	40%
Total	100%

SEMESTER PROJECTS:

Good practical experience will be gained by students during the semester through several assigned projects. The projects will involve the analysis and operation of utility systems. Presentations (oral and/or written) of the project results will be required. Software available for this class can be utilized for the projects.