

EEE 147: POWER SYSTEM OPERATION AND CONTROL LABORATORY

In Workflow

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Approval Path

1. Fri, 13 Sep 2019 21:51:16 GMT
Perry Heedley (pheedley): Approved for EEE Committee Chair
2. Sat, 21 Sep 2019 03:07:55 GMT
Fethi Belkhouche (fbelkhou): Approved for EEE Chair
3. Fri, 27 Sep 2019 17:22:07 GMT
Troy Topping (troy.topping): Approved for ECS College Committee Chair
4. Fri, 27 Sep 2019 19:21:17 GMT
Kevan Shafizadeh (kevan): Approved for ECS Dean

Date Submitted: Sat, 07 Sep 2019 17:31:40 GMT

Viewing: EEE 147 : Power System Operation and Control Laboratory

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Changes proposed by: Mahyar Zarghami (214200923)

Contact(s):

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Catalog Title:

Power System Operation and Control Laboratory

Class Schedule Title:

Power Syst Operation Lab

Academic Group: (College)

ECS - Engineering & Computer Science

Academic Organization: (Department)

Electrical and Electronic Engineering

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Fall 2020 (2020/2021 Catalog)

Subject Area: (prefix)

EEE - Electrical and Electronic Engineering

Catalog Number: (course number)

147

Course ID: (For administrative use only.)

191844

Units:

1

In what term(s) will this course typically be offered?

Fall, Spring

Does this course require a room for its final exam?

Yes, final exam requires a room

Does this course replace an existing experimental course?

No

This course complies with the credit hour policy:

Yes

Justification for course proposal:

The prerequisite for this lab course needs to change from EEE 141 to EEE 142. This is due to the fact that the knowledge of course materials in EEE 142 is needed before taking this course.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)

Computer simulation methods to describe power system behavior under steady state and dynamic conditions. Experiments conducted using MATLAB and Simulink for load flow in distribution lines, optimal power dispatch, synchronous machine transient behavior under short circuit conditions, transient stability, voltage and reactive power control, classical and modern load frequency control. Laboratory three hours.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Does this course have prerequisites?

Yes

Prerequisite:

EEE 142.

Prerequisites Enforced at Registration?

Yes

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Laboratory

Laboratory Classification

CS#16 - Science Laboratory (K-factor=2 WTU per unit)

Laboratory Units

1

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc."

After completion of this course, students will be able to:

- 1- Determine the needed information to perform Power Flow analysis. Perform and interpret the results of Power Flow analysis using multiple professional computer applications.
- 2- Determine the needed information to perform Short-Circuit analysis. Perform and interpret the results of Short-Circuit analysis using multiple professional computer applications.
- 3- Determine the needed information to perform Economic Dispatch and Optimal Power Flow in power systems. Perform Economic Dispatch and Optimal Power Flow analyses using multiple professional computer applications.
- 4- Perform Small-Signal and Transient Stability analyses in power systems.
- 5- Apply appropriate methods to control and stabilize frequency in power systems.

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.

Lab assignments to assess ELO 1 through 5

Exam-1 to assess ELO 1 and 2

Exam-2 to assess ELO 3, 4, and 5

Is this course required in a degree program (major, minor, graduate degree, certificate?)

No

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals**Undergraduate Learning Goals:**

Competence in the disciplines
 Integrative learning
 Intellectual and practical skills

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)**Is this a General Education (GE) course or is it being considered for GE?**

No

Key: 1694