

# EEE 135: RENEWABLE ELECTRICAL ENERGY SOURCES AND GRID INTEGRATION

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## In Workflow

1. EEE Committee Chair (pheedley@csus.edu)
2. EEE Chair (mahyar.zarghami@csus.edu)
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9. Catalog Editor (torsetj@csus.edu)
10. Registrar's Office (w lindsey@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

## Approval Path

1. Fri, 09 Apr 2021 22:34:04 GMT  
Perry Heedley (pheedley): Approved for EEE Committee Chair
2. Sat, 08 May 2021 00:53:45 GMT  
Mahyar Zarghami (mahyar.zarghami): Approved for EEE Chair
3. Fri, 03 Sep 2021 18:58:34 GMT  
Gareth Figgess (figgess): Rollback to EEE Committee Chair for ECS College Committee Chair
4. Fri, 10 Sep 2021 22:37:48 GMT  
Perry Heedley (pheedley): Approved for EEE Committee Chair
5. Fri, 10 Sep 2021 22:43:49 GMT  
Mahyar Zarghami (mahyar.zarghami): Approved for EEE Chair
6. Fri, 17 Sep 2021 17:20:49 GMT  
Mohammed Eltayeb (mohammed.eltayeb): Approved for ECS College Committee Chair
7. Fri, 17 Sep 2021 17:36:30 GMT  
Behnam Arad (arad): Approved for ECS Dean

Date Submitted: Fri, 09 Apr 2021 22:33:44 GMT

**Viewing: EEE 135 : Renewable Electrical Energy Sources and Grid Integration**

**Last edit: Fri, 10 Sep 2021 22:43:05 GMT**

Changes proposed by: Tracy Toups (218655646)

**Contact(s):**

Name (First Last)	Email	Phone 999-999-9999
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**Catalog Title:**

Renewable Electrical Energy Sources and Grid Integration

**Class Schedule Title:**

Renewable Elec Energy Sources

**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 2022 (2022/2023 Catalog)

**Subject Area: (prefix)**

EEE - Electrical and Electronic Engineering

**Catalog Number: (course number)**

135

**Course ID: (For administrative use only.)**

201297

**Units:**

3

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

Spring term only

**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 major change is to add EEE 141 as a sufficient prerequisite.

EEE 135 is an introductory course on renewable energy systems and does not need advanced machinery concepts that are taught in EEE130. Therefore a broad understanding of power systems and three phase power is sufficient, as taught in EEE141.

Thus, this proposal will change the pre-requisites of EEE 135 to either EEE141 or EEE 130. There is no content change otherwise.

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

The study of existing sources of renewable electric energy such as wind, solar, geothermal, hydro, tidal, wave power, and biomass. Emphasis on wind and solar energy sources and their integration into the electric power grid. Various energy storage methods to accommodate the intermittent nature of these resources. Economic constraints, environmental benefits and institutional regulations.

**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 141 or EEE 130.

**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):**

Lecture

**Lecture Classification**

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

**Lecture Units**

3

**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."**

1. Debating different energy sources and environmental effects.
2. Integrating solar technology and wind power systems into the power system.
3. Apprising the viability of water, biomass, geothermal, and fuel cell technology.

**Attach a list of the required/recommended course readings and activities:**

EEE135 syllabus 2021.docx

**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.**

Homework to assess ELO 1-3

Quizzes to assess ELO 1-3

Exams to assess ELO 1-3

**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?**

Yes

**Indicate which department(s) will be affected by the proposed course:**

Department(s)
Physics

**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

**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

**Please attach any additional files not requested above:**

CommunicationWithPhysics\_Changes to the BS EEE Program .pdf

**Reviewer Comments:**

**Gareth Figgess (figgess) (Fri, 03 Sep 2021 18:58:34 GMT):** Rollback: Per Mahyar's Request

Key: 1686