BASIC INFORMATION

Requester(s): Lauren Hadley
College: South Seattle Community College
Division/Dept: Apprenticeship-GT Campus
Dean: Holly Moore
Peer Reviewer(s): Karen L Whitney

COURSE INFORMATION

Proposed Course Number:
Prefix: AMTA  Number: 101

☑ Request a new Prefix
☐ This will be a common course

Full Title: Basic Electricity
Abbreviated Title: Basic Electricity

Catalog Course Description:
This course introduces the fundamentals of basic electricity, preparing the way for further study of electrical circuitry, thus providing the necessary basis for understanding how aircraft electrical systems function.

Course Length: NA  ☑ Request an Exception
This apprenticeship course runs 12 weeks.

Course Prerequisite(s):
Instructor approval.

Course Corequisite(s):
Acceptance into AJAC apprenticeship program.

Topical Outline:

TOPICAL OUTLINE:

I. Week One
   a. Introductions, Brief Course Overview, An Introduction to Electricity

II. Week Two
a. Direct Current Electricity

III. **Week Three**
   a. Alternating Current Electricity

IV. **Week Four**
   a. Alternating Current Electricity (continued)

V. **Week Five**
   a. Midterm Overview

VI. **Week Six**
   a. Midterm

VII. **Week Seven**
   a. Electrical Circuit Components

VIII. **Week Eight**
   a. Inductors, Transformers, Rectifiers, Solid-State Devices

IX. **Week Nine**
   a. Integrated Circuits, Chemical Energy into Electricity, Aircraft Batteries

X. **Week Ten**
   a. Aircraft Electrical Power Circuits

XI. **Week Eleven**
   a. Aircraft Electrical Load Circuits

XII. **Week Twelve**
   a. Final

### COURSE CODING

<table>
<thead>
<tr>
<th>Funding Source:</th>
<th>1......................State</th>
</tr>
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<tbody>
<tr>
<td>Institutional Intent:</td>
<td>21......................Vocational Preparatory</td>
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</table>

This Course is a requirement for the following program(s):
(No Programs Selected)

- ✔ My Course Proposal is a requirement for a program not on this list
  
  Program Title/Description/Notes:
  
  This course is part of the Aircraft Mechanic Airframe Apprenticeship Program (AJAC)

<table>
<thead>
<tr>
<th>Will this course transfer to a 4-year university?</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>Is this course designed for Limited English Proficiency?</td>
<td>No</td>
</tr>
<tr>
<td>Is this course designed for Academic Disadvantaged?</td>
<td>No</td>
</tr>
<tr>
<td>Does this course have a Workplace Training component?</td>
<td>Yes</td>
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<table>
<thead>
<tr>
<th>CIP Code:</th>
<th>47.0607</th>
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<tbody>
<tr>
<td>Request Specific CIP Code</td>
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**EPC Code:** 722

**Credits:**

<table>
<thead>
<tr>
<th>List Course Contact Hours</th>
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<tbody>
<tr>
<td>Lecture (11 Contact Hours : 1 Credit)</td>
<td>60</td>
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<tr>
<td>Lab (22 Contact Hours : 1 Credit)</td>
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<tr>
<td>Clinical Work (33 Contact Hours : 1 Credit)</td>
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<tr>
<td>Other (55 Contact Hours : 1 Credit)</td>
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</tr>
<tr>
<td>Total Contact Hours</td>
<td>60</td>
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<tr>
<td>Total Credits</td>
<td>5.5</td>
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**COLLEGE SUPPLEMENTAL**

<table>
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<th>Proposed Quarter of Implementation</th>
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**Class Capacity:** 20

**Modes of Delivery:**
- [x] Fully On Campus
- [ ] Fully Online
- [ ] Hybrid
- [ ] Other

**Class Schedule Description:**
Class held Thursday evenings 5 - 9 p.m.

**Student Learning Outcomes:**

**Communication**
Read and listen actively to learn and communicate

**Computation**
Use arithmetic and other basic mathematical operations as required by program of study
Apply quantitative skills for academic, and career purposes

**Critical Thinking and Problem-Solving**
Think critically in evaluating information, solving problems, and making decisions

**Technology**
Select and use appropriate technological tools for academic, and career tasks
**Personal Responsibility**
Uphold the highest standard of academic honesty and integrity

Respect the rights of others in the classroom, online and in all other school activities

Attend class regularly, complete assignments on time and effectively participate in classroom and online discussions, group work and other class-related projects and activities

Abide by appropriate safety rules in laboratories, shops and classroom

**Information Literacy**
Independently access, evaluate and select information from a variety of appropriate sources

Use information effectively and ethically for a specific purpose

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### Program Outcomes:

<table>
<thead>
<tr>
<th>SLO #</th>
<th>SCC Student Learning Outcome</th>
<th>Included in Course Objective Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 1.1</td>
<td>Communication – Read and listen actively to learn and communicate</td>
<td>5</td>
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<tr>
<td>SLO 1.2</td>
<td>Communication – Speak and write effectively for academic and career purposes</td>
<td></td>
</tr>
<tr>
<td>SLO 2.1</td>
<td>Computation – Use arithmetic and other basic mathematical operations as requirements by program of study</td>
<td>1, 2, 3, 4,</td>
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<tr>
<td>SLO 2.2</td>
<td>Computation – Apply quantitative skills for academic and career purposes</td>
<td>4</td>
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<tr>
<td>SLO 3.1</td>
<td>Human Relations – Use social interactive skills to work in groups effectively</td>
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<tr>
<td>SLO 3.2</td>
<td>Human Relations – Have knowledge of the diverse cultures represented in our multicultural society</td>
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</tr>
<tr>
<td>SLO 4.1</td>
<td>Critical thinking and problem solving – Think critically in evaluating information, solving problems and making decisions.</td>
<td>5, 6, 8</td>
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<tr>
<td>SLO 5.1</td>
<td>Technology – Select and use appropriate technological tools for academic and career tasks</td>
<td>1 – 10</td>
</tr>
<tr>
<td>SLO 6.1</td>
<td>Personal responsibility – Uphold the highest standard of academic honesty and integrity</td>
<td>1 – 10</td>
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<tr>
<td>SLO 6.2</td>
<td>Personal responsibility – Respect the rights of others in the classroom, online and in all other school activities</td>
<td>1 – 10</td>
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</table>
SLO 6.3 complete assignments on time and effectively participate in classroom and online discussions, group work and other class-related projects and activities. 1 – 10
SLO 6.4 Personal responsibility – Abide by appropriate safety rules in laboratories, shops and classrooms. 1 – 10
SLO 7.1 Information literacy – Independently access, evaluate and select information from a variety of appropriate sources. 5 – 10
SLO 7.2 Information literacy – Have knowledge about legal and ethical issues related to the use of information
SLO 7.3 Information literacy – Use information effectively and ethically for a specific purpose. 5 – 10

Course Outcomes / Objectives:
Upon completion of the course, students will be able to:

1. Calculate and measure capacitance and inductance.
2. Calculate and measure electrical power.
3. Measure voltage, current, resistance, and continuity.
4. Determine the relationship of voltage, current, and resistance in electrical circuits.
5. Read and interpret aircraft electrical circuit diagrams, including solid state devices and logic functions.
6. Inspect and service batteries.
7. Repair and inspect aircraft electrical system components; crimp and splice wiring to manufacturers' specifications; and repair pins and sockets of aircraft connectors.
8. Install, check, and service airframe electrical wiring, controls, switches, indicators, and protective devices.
9. Inspect, check, troubleshoot, service, and repair alternating and direct current electrical systems.
10. Inspect, check, and troubleshoot constant speed and integrated speed drive generators.

Explain the student demand for the course and potential enrollment:
This is an apprenticeship course. Students are working with employers and enrolled in apprenticeship classes.

Explain why this course is being revised:
AJAC is now offering the Aircraft Mechanic Airframe (AMTA) apprenticeship program at SSCC.

What challenges, if any, do you foresee in offering this course:
None.
This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

<table>
<thead>
<tr>
<th>Lauren Hadley</th>
<th>Lauren Hadley</th>
<th>11/21/2013</th>
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<tr>
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Dean:

<table>
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<tr>
<th>Holly Moore</th>
<th>Holly Moore</th>
<th>1/8/2014</th>
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Results of SSCC Curriculum Coordinating Council Findings

Participating Faculty Response and Remarks

- [ ] Recommended for approval
- [ ] Not recommended for approval
- [x] This course did not go through Committee Review

Chairman, Curriculum Coordinating Council:

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Vice President for Instruction:

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<tr>
<th>Donna Miller-Parker</th>
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