**PROGRAM CHANGES**

 WEBER STATE UNIVERSITY

**Submission Date: November 4, 2013**

**Submitter Name: Julanne McCulley**

**College: College of Applied Science and Technology**

**Department**: Engineering Technology

**Program Title:** Electronics Engineering Technology

Check all that apply:

\_X\_\_\_New course(s) required for major, minor, emphasis, or concentration.

\_X\_\_\_Modified course(s) required for major, minor, emphasis, or concentration.

\_X\_\_\_Credit hour change(s) required for major, minor, emphasis, or concentration.

\_X\_\_\_Credit hour change(s) for a course which is required for the major, minor, emphasis, or concentration.

\_\_\_\_Attribute change(s) for any course.

\_\_\_\_Program name change.

\_\_\_\_Deletion of required course(s).

\_\_\_\_Program mode of delivery/format change (Graduate Programs ONLY)

\_\_\_\_Other changes (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**JUSTIFICATION:**

The following changes will be made to this program:

CEET 1140

* Credit hour change
* Course name change from AC and DC Circuits to DC Circuits

CEET 2010

* New course: AC Circuits

Program Change to accommodate above changes:

* Change in credit hours to the BS, AAS, and Minor in EET
* Removal of the requirement for ENGL 1010
* Addition of CEET 2010 course (3 Credit Hours)
* Reduction in credit hours for CEET 1140 from 4 credit hours to 3 credit hours

The EET 1140 AC and DC Circuits course has too much material to cover effectively in one semester with an aggressive schedule. Students are rushed through the material and we are finding through assessment in subsequent courses that retention levels are low in AC and DC fundamentals as well as circuit analysis. Additionally, student lab skills are proving insufficient.

The Electronics Engineering Technology program is accredited by the Technology Accreditation Commission of ABET, http://www.abet.org.

*Course Credit Hour Change*

EET 1140 AC and DC Circuits (~~4 Cr Hrs~~) (3 Cr Hrs)

– reduce the credit hours for this course from four credit hours to three credit hours and rename it to DC Circuits, eliminating the material for AC Circuits. Utilize the first six weeks to cover the material in depth that is currently reviewed in breadth in the first two/three weeks. Include additional labs to reinforce DC Circuit theory and to assist students in the development of applied technical skills. Supplement the current course material on network analysis, spending additional time on network theorems, giving students the capability to successfully analyze DC circuits and solve related problems.

See attached syllabus.

*New Course Proposal*

-create a new course, AC Circuits (3 Cr Hrs), and split out the current material for AC circuits, adding content on Decibels, Filters, Bode Plots, and AC System Analysis. Purposeful labs will be added to the course to strengthen aptitude in AC circuits along with computer simulation software assignments in Matlab and Multisim.

See attached syllabus.

**Current Course Content in EET 1140 AC and DC Circuits**

* Intro to DC
* Voltage, Current Resistance
* Ohm’s Law, Power, Energy
* Series DC Circuits
* Series-Parallel DC Circuits
* Methods of Analysis for DC Circuits
* Network Theorems for DC Circuits
* Max Power
* Capacitors
* Inductors
* Magnetic Circuits
* Sinusoids
* Phasors
* Series-Parallel AC Circuits
* Analysis of AC Circuits
* AC Network Theorems
* Resonance
* Filters

*6 Labs*

*3 Computer Simulations*

*2 Matlab programming exercises*

**Modified Course Content for EET 1140 DC Circuits**

* Intro to DC
* Voltage, Current Resistance
* Ohm’s Law, Power, Energy
* Series DC Circuits
* Parallel DC Circuits
* Series-Parallel Circuits
* Methods of Analysis for DC Circuits
* Network Theorems for DC Circuits
* Max Power
* Capacitors
* Inductors

*6 Labs*

*8 Computer Simulations*

*2 Matlab programming exercises*

**New Course Content for EET 2010 AC Circuits**

* Sinusoids
* Phasors and Complex Notation
* Series AC Circuits
* Parallel AC Circuits
* Series-Parallel AC Circuits
* Analysis of AC Circuits
* AC Network Theorems
* Intro to AC Power
* Resonance in passive AC networks
* Filters
* Pulse Waveforms for Series RC and RL circuits

*6 Labs*

*6 Computer Simulations*

*4 Matlab programming exercises*

*Program Credit Hour Change to BS, AAS, and Minor in EET*

EET Minor credit hour change from 22 to 24 hours.

AAS EET credit hour change from 64 to 63 hours.

BS EET credit hour change from 123 to 122 hours.

Copy the present program from the current catalog and add the required changes (exactly as you wish them to appear in the catalog). Use strikeout (~~strikeout~~) when deleting items in the program and highlight (highlight) when adding items. If multiple changes are being proposed, please provide a summary.

**Electronics Engineering Technology (AAS)**

 Grade Requirements: A grade of “C” or better in all CEET and support courses (a grade of “C-” is not acceptable). Students must have an overall GPA of 2.5 or higher to graduate.

Credit Hour Requirements: A minimum of ~~64~~ 63 credit hours is required with a minimum of ~~35~~ 37 credit hours in the major. Transfer students are required to take a minimum of 20 credit hours at Weber State University.

Advisement

All Electronics Engineering Technology students are required to meet with their faculty advisor at least annually for course and program advisement. Please call the department secretary at 801-626-6305 to schedule an appointment.

Admission Requirements

See the department secretary to declare your program of study (major - see Enrollment Services and Information). No special admission or application requirements are needed for this program.

General Education

Refer to Degree and General Education Requirements for Associate of Applied Science requirements. Consult with your advisor for specific general education guidelines.

**Course Requirements for EET AAS Degree**

Required CEET Courses (37 credit hours)

CEET 1110 - Basic Electronics Credits: (2)

CEET 1130 - Digital Systems Credits: (4)

~~CEET 1140 - AC and DC Circuits Credits: (4)~~

EET 1140 - DC Circuits Credits: (3)

EET 2010 - AC Circuits Credits: (3)

CEET 2110 - Semiconductor Circuits Credits: (4)

CEET 2120 - Power and Motors Credits: (4)

CEET 2130 - PC Board Design Credits: (3)

CEET 2140 - Communications Systems Credits: (4)

CEET 2150 - Embedded Controllers Credits: (4)

CEET 2160 - Troubleshooting Credits: (3)

CEET 2170 - Industrial Controls Credits: (3)

**Required Support Course (3 credit hours)**

MFET 2410 - Quality Concepts and Statistical Applications Credits: (3) or

MATH 1040 QL - Introduction to Statistics Credits: (3)

**Required General Education Courses (23-28 credit hours)**

COMM 2110 HU - Interpersonal & Small Group Communication Credits: (3)

ENGL 2010 EN - Intermediate College Writing Credits: (3)

prerequisite is ENGL 1010 Introductory College Writing (3) or equivalent

MATH 1080 QL - Pre-calculus Credits: (5) or both

MATH 1050 QL - College Algebra Credits: (4) and

MATH 1060 - Trigonometry Credits: (3)

Gen Ed Life Science (4)

Gen Ed Social Science (Diversity) (3)

Gen Ed Creative Arts/Humanities (3)

Computer Literacy (2)

**Electronics Engineering Technology (BS)**

 Program Prerequisite: Not required.

Minor: Not required.

Grade Requirements: A grade of “C” or better in all CEET and support courses is required for this major (a grade of “C-” is not acceptable). Students must have an overall GPA of 2.5 or higher to graduate.

Credit Hour Requirements: A total of ~~123~~ 122 credit hours is required for graduation. A total of 40 upper division credit hours is also required (courses numbered 3000 and above). Transfer students are required to take a minimum of 30 credit hours at Weber State University.

Advisement

All Electronics Engineering Technology students are required to meet with their faculty advisor at least annually for course and program advisement. Please call the department secretary at 801-626-6305 to schedule an appointment.

Admission Requirements

See the department secretary to declare your program of study (major - see Enrollment Services and Information). No special admission or application requirements are needed for this program.

General Education

Refer to Degree and General Education Requirements for Bachelor of Science degrees. Consult with your advisor for specific general education guidelines.

Course Requirements for EET BS Degree

Required Lower-Division CEET Courses (~~35~~ 37 credit hours)

CEET 1110 - Basic Electronics Credits: (2)

CEET 1130 - Digital Systems Credits: (4)

~~CEET 1140 - AC and DC Circuits Credits: (4)~~

EET 1140 - DC Circuits Credits: (3)

EET 2010 - AC Circuits Credits: (3)

CEET 2110 - Semiconductor Circuits Credits: (4)

CEET 2120 - Power and Motors Credits: (4)

CEET 2130 - PC Board Design Credits: (3)

CEET 2140 - Communications Systems Credits: (4)

CEET 2150 - Embedded Controllers Credits: (4)

CEET 2160 - Troubleshooting Credits: (3)

CEET 2170 - Industrial Controls Credits: (3)

Required Upper-Division CEET Courses (35 credit hours)

CEET 3010 - Circuit Analysis Credits: (4)

CEET 3040 - Instrumentation and Measurements Credits: (4)

CEET 3060 - Real-Time Embedded Controllers Credits: (4)

CEET 3090 - Project Management Credits: (2)

CEET 4010 - Senior Project I Credits: (2)

CEET 4020 - Senior Project II Credits: (2)

CEET 4030 - Controls & Systems Credits: (4)

CEET 4040 - Signals and Systems Credits: (4)

CEET 4060 - Advanced Communications Credits: (4)

CEET 4090 - Systems Design and Integration Credits: (3)

CEET 4890 - Cooperative Work Experience Credits: (2)

Required Support and General Education Courses (47-52 credit hours)

MATH 1080 QL - Pre-calculus Credits: (5)

or both

MATH 1050 QL - College Algebra Credits: (4) and

MATH 1060 - Trigonometry Credits: (3)

MATH 1210 - Calculus I Credits: (4)

MFET 2410 - Quality Concepts and Statistical Applications Credits: (3) or

MATH 1040 QL - Introduction to Statistics Credits: (3)

BSAD 3000 - Small Business Management Credits: (3)

COMM 2110 HU - Interpersonal & Small Group Communication Credits: (3)

PHYS 2210 PS - Physics for Scientists and Engineers I Credits: (5)

ENGL 2010 EN - Intermediate College Writing Credits: (3)

prerequisite is ENGL 1010 Introductory College Writing (3) or equivalent

ENGL 3100 - Professional and Technical Writing Credits: (3)

or

NTM 3250 - Business Communication Credits: (3)

Gen Ed Life Science (4)

Gen Ed Social Science (Diversity) (6)

Gen Ed Creative Arts/Humanities (Diversity) (6)

Computer Literacy (2)

Electronics Engineering Technology Minor

Grade Requirements: A grade of “C” or better in courses used toward the minor (a grade of “C-” is not acceptable).

Credit Hour Requirements: A minimum of 22 credit hours of CEET courses.

This program offers students who major in another discipline the option to obtain a minor in Electronics Engineering Technology.

**Course Requirements for Minor**

CEET Courses Required (~~22~~ 24 credit hours)

CEET 1110 - Basic Electronics Credits: (2)

CEET 1130 - Digital Systems Credits: (4)

~~CEET 1140 - AC and DC Circuits Credits: (4)~~

EET 1140 - DC Circuits Credits: (3)

EET 2010 - AC Circuits Credits: (3)

CEET 2110 - Semiconductor Circuits Credits: (4)

CEET 2150 - Embedded Controllers Credits: (4)

and one of the following courses:

CEET 3030 - FPGA and ASIC Design Credits: (4)

CEET 3040 - Instrumentation and Measurements Credits: (4)

CEET 3050 - Assembly Language & Device Drivers Credits: (4)

CEET 3060 - Real-Time Embedded Controllers Credits: (4)

CEET 3080 - Embedded Networks Credits: (4)

After the appropriate Approvals, **Email the electronic file (Microsoft Word .docx) to** bstockberger @weber.edu You may scan the Approval Page with the Signatures and email it, send a hard copy to MC 1033 through campus mail or bring to the Faculty Senate Office MA210J. Send all supporting documents pertaining to your proposal.

**INFORMATION PAGE**

Did this program change receive unanimous approval within the Department? \_Y\_\_ If not, what are the major concerns raised by the opponents?

Explain any effects this program change will have on program requirements or enrollments in other departments including the Bachelor of Integrated Studies Program. In the case of similar offerings or affected programs, **you should include letters from the departments in question stating their support or opposition to the proposed program**.

N/A

Indicate the number of credit hoursfor course work within the program. (Do not include credit hours for General Education, Diversity, or other courses unless those courses fulfill requirements within the proposed program.)

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Indicate the number of credit hours for course work within the current program. (Do not include credit hours for General Education, Diversity, or other courses unless those courses fulfill requirements within the current program.) \_\_\_\_

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**Graduate Programs only**: Describe any proposed changes in the instructional mode of delivery or course format that are program-wide in nature or that affect more than one-third of the course taught in the program (e. g. changing from in-class to online instruction).