ACADEMIC SENATE PROPOSAL TRACKING SHEET

(Document To Be Originated By Academic Senate Secretary On Canary Color Paper)

All proposals MUST have their originating college faculty body (Ex. Arts & Sciences, Education and Nursing; Technical Sciences) approval and must be signed by the submitter and the college dean before being submitted to the Academic Senate Secretary.

1. **Submit all proposals (using the appropriate Academic Senate program/degree and/or course revision forms) to the Academic Senate Secretary.**
2. **The Academic Senate Secretary logs and numbers items and forwards them to the appropriate Academic Senate subcommittee(s): General Education (if applicable), or Curriculum.**
3. **The Academic Senate subcommittee(s) consider(s) the proposal. If approved, the proposal is forwarded to the next committee. If a committee disapproves the proposal, the originator may request that the item be forwarded to the next body for consideration. The committee will provide written rationale to the originator when a proposal is disapproved and the proposal is returned to the originator.**
4. **The Academic Senate considers the proposal and approves or disapproves. If approved, the proposal is forwarded to the Full Faculty for consideration. If the Academic Senate disapproves the proposal, the originator may request that the item be forwarded to the Full Faculty for consideration. The Academic Senate will provide written rationale to the originator when proposals are disapproved and the proposal is returned to the originator.**
5. **The Full Faculty considers Academic Senate approved proposals. If faculty approve, the proposal will then be forwarded to the Provost. The Provost approves or disapproves the proposal. If approved, the proposal is then forwarded to the Chancellor.**
7. **The Chancellor approves or disapproves the proposal.**

Subcommittee and Academic Senate college representatives will notify their respective colleges' of the progress of submitted proposals or the proposal may be tracked via the web page --
http://www.msun.edu/admin/provost/asproposals.htm
Documentation and forms for the curriculum process is also available on the web page:
http://www.msun.edu/admin/provost/asforms.htm

*****(If a proposal is disapproved at any level, it is returned through the Academic Senate secretary to the Dean of the submitting college who then notifies the originator.)**

Proposal # 09-24 **Title:** Sustainable Energy Tech #2
(proposal explanation, submitter and college dean signatures on attached program/degree or course revision form)

	Date	
Received by ACAD Senate	4-14-10	
Forwarded to Gen Ed Committee	____	**Approved** ____ **Disapproved** ____
		Signature **Date**
Returned to ACAD Senate		
Forwarded to Curriculum Committee	4-14-10	**Approved** V **Disapproved**
		Signature **Date** 4/7/10
Returned to ACAD Senate for Vote	4-28-10	**Approved** **Disapproved**
		Signature **Date** 5/4/2010
Sent to Provost's office for Full Faculty vote		
Voted on at Full Faculty meeting	X	**Approved** **Disapproved**
		Signature **Date** 3/5/10
Forwarded to Provost for Approval/Disapproval	5-4-10	**Approved** X **Disapproved** ____
		Signature **Date**
Forwarded to Chancellor for Approval/Disapproval	5-6-10	**Approved** X **Disapproved** 5/10/10
		Signature **Date**
Copies sent to originating college and	5-10-10	

Updated 09/10/09

COURSE REVISION FORM

NEW_X_ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Technology Date 11/20/09

Submitter Shizich Dean Date 4 · 14 · 2010
Signature Signature (indidates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: *College of Technical Sciences*
Program Area: *Sustainable Energy Technology*
Date: *11/20/09*
Course Prefix & No.: SET 101

Course Title: Introduction to Sustainable Energy
Credits: 3

Required by: Sustainable Energy Technology CAS
Sustainable Energy Technology AAS

Selective in:
Elective in:
General Education: No

Lecture: X
Lecture/Lab:
Gradable Lab:
Contact hours lecture: 3
Contact hours lab:

Current Catalog Description (include all prerequisites):
N/A

Proposed or New Catalog Description (include all prerequisites):
This course provides an overview of sustainable energies including solar, wind, hydro, biomass, geothermal and other emerging technologies. Students will learn the basic principles of each new technology. Students will also investigate renewable resources and their associated technologies.

Course Outcome Objectives:

- List and explain the main sources of energy and their primary applications.
- Describe the challenges and problems associated with the use of various conventional energy sources, including fossil fuels and nuclear and the challenges and problems associated with alternative renewable energy sources.
- List and describe the primary renewable energy resources and technologies. Compare and contrast each system.
- Describe and illustrate basic electrical concepts and system components.

- . Convert units of energy to quantify energy demand and make comparisons among energy uses, resources, and technologies.
- Understand comparative differences in energy needs between large industrial applications and small business or residential applications.
- Understand the concept of net energy production and the concept of integration of renewable energy into existing generation and distribution systems.
- Understand the concepts of energy conservation and wise-use (i.e. allocation and efficiency) as keys to sustainable energy.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Delivery of this course will require 3/24 FTE-f for delivery of instruction. In addition, library resources to build a collection of appropriate books and periodicals amounting to an estimated $300 per year for three years. Demonstration equipment and videos amounting to $500 are budgeted to support the course. The cost of course development and initial resources are borne by a Grant through 2012.

COURSE REVISION FORM

NEW_X_ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Technology Date 11/20/09

Submitter Strizek Dean Date 4.14.2010
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: *College of Technical Sciences*
Program Area: *Sustainable Energy Technology*
Date: *11/20/09*
Course Prefix & No.: EET 101

Course Title: AC/DC Electronics I
Credits: 3

Required by:

Selective in:
Elective in:
General Education:

Lecture:
Lecture/Lab:
Gradable Lab:
Contact hours lecture:
Contact hours lab:

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

I have reviewed the following proposals + support their approval by the curriculum committee

09-05

09-17

09-19

Katherine D

4-5-10

COURSE REVISION FORM

NEW____ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Tech Date 1/13/10

Submitter Cathy Strzich Dean Gregory O. Kyle Date 1.14.2010
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: ***College of Technical Sciences***
Program Area: ***Sustainable Energy Technology***
Date: 1/12/10
Course Prefix & No.: SET xxx

Course Title: Industrial Safety and Rigging
Credits: 3

Required by: Sustainable Energy Tech. CAS, AAS

Selective in:
Elective in:
General Education: No

Lecture: 3
Lecture/Lab:
Gradable Lab:
Contact hours lecture: 3
Contact hours lab:

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):
Description: This course provides an overview of safe industrial practices and basic rigging techniques.

Course Outcome Objectives:

- Complete the requirements for an OSHA 10 certification.
- Demonstrate the ability to perform CPR.
- Demonstrate the ability to properly construct and use a scaffold system.
- Identify the equipment needed and properly perform the task of shifting heavy loads using winches, cranes, and other similar equipment.
- Demonstrate the ability to safely secure loads for transport.
- Demonstrate the ability to properly climb using fall restraint and arrest gear.
- Complete the requirements to earn an industry recognized fall restraint certification.
- Demonstrate the ability to recognize and avoid hazards.
- Recognize hazardous materials and Material Safety Data Sheets (MSDS).

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW____ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Tech Date 1/13/10

Submitter Larry Strizich Dean Gregory O. Hyde Date 4.14.2010
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: ***College of Technical Sciences***
Program Area: ***Sustainable Energy Technology***
Date: 1/12/10
Course Prefix & No.: SET xxx

Course Title: Fundamentals of Mechanical Systems
Credits: 3

Required by: Sustainable Energy Tech. CAS, AAS

Selective in:
Elective in:
General Education: No

Lecture: 3
Lecture/Lab:
Gradable Lab:
Contact hours lecture: 3
Contact hours lab:

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):
Description: This course covers energy industry mechanical systems at the component level. Topics covered include repairing a basic mechanical system, familiarity with basic tooling, and understanding gears and rotational relationships.

Course Outcome Objectives:

- Understand principles of strength of materials.
- Recognize levers, gears, pulleys, and winches and how they are used in mechanical systems.
- Recognize common mechanical system tools and demonstrate how to use them.
- Understand basic drive trains, shafts, bearings, and seals and how they are used in mechanical systems.
- Recognize braking and torque systems and how they are used in mechanical systems.
- Recognize common fasteners and couplings and how they are used in mechanical systems.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW_X_ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Technology Date 11/20/09

Submitter Signature Dean Signature (indicates "college" level approval) Date 4-14-2010

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: *College of Technical Sciences*
Program Area: *Sustainable Energy Technology*
Date: *11/20/09*
Course Prefix & No.: EET 103

Course Title: AC/DC Electronics II
Credits: 3

Required by:

Selective in:
Elective in:
General Education:

Lecture:
Lecture/Lab:
Gradable Lab:
Contact hours lecture:
Contact hours lab:

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):

Course Outcome Objectives:

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW____ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Tech Date 1/13/10

Submitter Larry Sidzich Dean Gregory O. Kyle Date 4-14-2010
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: ***College of Technical Sciences***
Program Area: ***Sustainable Energy Technology***
Date: 1/12/10
Course Prefix & No.: SET xxx

Course Title: Wind Technician Safety
Credits: 4

Required by: Sustainable Energy Tech. CAS, AAS

Selective in:
Elective in:
General Education: No

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 2
Contact hours lab: 4

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):
Description: This course builds on the safety topics covered in the Industrial Safety and Rigging course and focuses on safety requirements and techniques common in wind energy technician jobs.

Course Outcome Objectives:
- Demonstrate the ability to safely work at heights of up to 100 meters.
- Demonstrate the ability to work in confined spaces.
- Demonstrate the ability to safely lift up to 50 pounds unassisted.
- Demonstrate proper rigging techniques.
- Understand hydraulic safety requirements.
- Understand cold and hot weather safety requirements.
- Understand fire safety requirements.
- Understand lightning and electrical safety requirements.
- Understand Environmental, Health, and Safety (EHS) guidelines for wind energy.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW____ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Tech Date 1/13/10

Submitter Larry Savich Dean Gregory O. Kyl Date 11-16-2010
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: ***College of Technical Sciences***
Program Area: ***Sustainable Energy Technology***
Date: 1/12/10
Course Prefix & No.: SET xxx

Course Title: Wind Turbine Equipment
Credits: 3

Required by: Sustainable Energy Tech. CAS, AAS

Selective in:
Elective in:
General Education: No

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab:

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):
Description: This course introduces common wind turbine components and equipment. The mechanical systems that make up the subsystems of wind turbines will be covered in addition to structural characteristics and aerodynamic principles.

Course Outcome Objectives:

- Demonstrate appropriate torque techniques for common wind turbine fasteners.
- Understand blade and tower structures characteristics and design features.
- Recognize seals and gaskets used in wind turbines and understand their maintenance requirements.
- Recognize wind turbine brake system components and understand their maintenance requirements.
- Recognize the mechanical systems that make up the subsystems of wind turbines

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COURSE REVISION FORM

NEW____ DROPPED____ MAJOR REVISION____ FOR INFORMATION ONLY____

College COTS Program Area Sustainable Energy Tech Date 1/13/10

Submitter Larry Stevich Dean Date 4-14-2010
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

Please provide the following information:
College: ***College of Technical Sciences***
Program Area: ***Sustainable Energy Technology***
Date: 1/12/10
Course Prefix & No.: SET xxx

Course Title: Wind Turbine Operations & Maintenance
Credits: 3

Required by: Sustainable Energy Tech. CAS, AAS

Selective in:
Elective in:
General Education: No

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab:

Current Catalog Description (include all prerequisites):

Proposed or New Catalog Description (include all prerequisites):
Description: This course exposes students to real-world scenarios that may be encountered in the workplace. Practice of installation, operation, maintenance, troubleshooting, and repair of wind turbine electro-mechanical systems are all included in this course.

Course Outcome Objectives:

- Understand wind turbine preventative maintenance procedures.
- Recognize wind turbine operating procedures and steps.
- Understand wind turbine data logging and monitoring requirements.
- Demonstrate an ability to use wind turbine systems software.
- Recognize common wind turbine technical manuals and when they are used.
- Understand common wind turbine troubleshooting techniques.
- Understand extreme condition maintenance procedures.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Course Form

Department: College of Technical Sciences
Program Area: Engineering Technology: Electronics Engineering Technology
Date: ~~February 1998~~ Apr 2010

Course pref and no.: EET 103
Course title: AC-DC Electronics II
Credits: 3

Required by: Sustainable Energy Technology, CAS & AAS

Selective in:
Elective in:
General Educ:

Lecture:
Lecture/lab: X
Contract hrs. lecture: 2
Contact hrs. lab: 2

Current/proposed Catalog Description (Include all prerequisites:)

This lecture/lab course provides an introduction to solid state devices. Topics covered include PN diode characteristics, rectifier circuits, bipolar transistors, field-effect transistors, and amplifier circuits. Prerequisite EET 101 or equivalent. **Course Fee: $10.00**

Course Outcome Objectives:

On completion of this course the student will have shown the ability to:

1. Explain the operation of real & ideal voltage and current sources
2. Understand the operation of diodes, bipolar transistor & field effect transistors.
3. Use computer simulation to analyze circuit performance.
4. Construct & troubleshoot circuits.

New instructional Resources needed (including: library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COTS Review Date: ~~06/2007~~ 4/2010

Course Form

Department: College of Technical Sciences
Program Area: Engineering Technology: Electronics Engineering Technology
Date: ~~February 1998~~ Apr 2010

Course pref and no.: EET 101
Course title: AC-DC Electronics I
Credits: 3

Required by: Sustainable Energy Technology – CAS, AAS

Selective in:
Elective in:
General Educ:

Lecture:
Lecture/lab: X
Contract hrs. lecture: 2
Contact hrs. lab: 2

Current/proposed Catalog Description (Include all prerequisites:)

This is a lecture/lab course that provides the foundation for major and minor courses in the Engineering Technology : Electronics Engineering Technology program. Topics include basic electrical & electronic concepts, circuit testing, troubleshooting, and the use of test equipment. **Course Fee: $10.00**

Course Outcome Objectives:

On completion of the course the student will have shown the ability to:

1. explain the function of a technician, a technologist, & an engineer or a production team
2. explain & use basic concepts & terms in DC electronics
3. explain & use basic concepts & terms in AC electronics
4. perform laboratory experiments to verify theoretical concepts
5. use basic test equipment

New instructional Resources needed (including: library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

COTS Review Date: ~~06/2007~~ 4/2010

2/30
Lourdes
fax
2nd