

Revised 05/08/2009

PROPOSAL SUMMARY AND ROUTING FORM

Proposal Title: Building Systems Applications

Initiating Unit or Individual: Construction Technology and Management Programs

Contact Person's Name: Edward Brayton e-mail: braytone@ferris.edu phone: x2370

Date or Term of Proposal Implementation: January 2010 Spring Semester 2010

- Group I - A – New degree/major or major, redirection of a current offering, or elimination of a degree, major or minor
- Group I - B – New minors or concentrations
- Group II - A – Minor curriculum clean-up and course changes
- Group II - B – New Course
- Group III - Certificates
- Group IV – Off-Campus Programs

Group/Individual	Signature	Date	Vote/Action *
Program Faculty	<i>John Schlett</i>	10/30/09	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Department Faculty	<i>John Schlett</i>	10/30/09	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Department Head / Chair	<i>John Schlett</i>	10/30/09	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
College Curriculum Committee			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Dean	<i>Steve E. [Signature]</i>	10/30/09	<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
University Curriculum Committee			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Senate			<input type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Academic Affairs	<i>Janell Flick</i>	11/2/09	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support

* Support with Concerns or Not Support must include a list of specific concerns. Votes must be shown for faculty groups. Administrators check appropriate action taken.

To be completed by Academic Affairs

President (Date Approved) Board of Trustees (Date Approved) President's Council (Date Approved)

VPAA
OCT 30 2009
PROVOST

1. Proposal Summary

(Summary is generally less than one page. Briefly: state what is proposed with a summary of rationale and highlights. Additional rationale may be attached.)

At the request of the Construction Technology and Management program's Industry Advisory Committee, they are requesting that our construction students have introduction to sustainability and "Green Building" knowledge. This course is designed specifically for construction students as an introduction to mechanical and electrical design techniques including the issue of sustainability as it applies to construction. This course will explore current and constantly changing technologies. Students will work with current building design and incorporate new technologies such as water conservation, energy consumption along with Leadership in Energy Efficiency and Design (LEED). Emphasis will be placed on research and analyzing the overwhelming and constantly updated information.

2. Summary of All Course Action Required*

a. Newly Created Courses to FSU:

Prefix	Number	Title
CONM	390	Building Systems Applications

b. Courses to be Deleted From FSU Catalog:

Prefix	Number	Title
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c. Existing Course(s) to be Modified:

Prefix	Number	Title
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d. Addition of existing FSU courses to program

Prefix	Number	Title
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e. Removal of existing FSU courses from program

Prefix	Number	Title
HVAC	337	Mechanical and Electrical Systems for Building

3. Summary of All Consultations

Form Sent (B or C)	Date Sent	Responding Dept.	Date Received & by Whom
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4. Will External Accreditation be Sought? (For new programs or certificates only)

_____ Yes _____ No

If yes, name the organization involved with accreditation for this program.

5. Program Checksheets affected by this proposal.

Associate in Applied Science Degree for Building Construction Technology

NEW COURSE INFORMATION FORM
See Sample – Limit to Two Pages Please

Course Identification:

Prefix: CONM Number 390 Title Building Systems Applications

Course Description:

This course is designed specifically for construction students as an introduction to mechanical and electrical design techniques including the issue of sustainability as it applies to construction. This course will explore current and constantly changing technologies. Students will work with current building design and incorporate new technologies such as water conservation, energy consumption along with Leadership in Energy Efficiency and Design (LEED). Emphasis will be placed on research and analyzing the overwhelming and constantly updated information.

Course Outcomes and Assessment Plan:

Course Outline including Time Allocation:

CREATE NEW COURSE
Course Data Entry Form

FORM F

Create New Course
Rev. 07/23/07

I. ACTION TO BE TAKEN: CREATE A NEW COURSE

Notes

1. Complete each item in Section I and Section II.
2. If this course is to be used as a prerequisite for other university courses, Form Fs that reflect the prerequisite change must be submitted for those courses as well.

Term Effective (6 digit code only): 201001 Examples: 200801(Spring), 200805(Summer), 200808(Fall)
Note: The first four digits indicate year, the next two digits indicate month in which term begins.

II. PROPOSED FOR NEW COURSE: Complete all sections a through r. See manual for clarification.

a. Course Prefix CONN b. Number 390 c. Enter Contact Hours per week in boxes.
LECTure 3 LAB INDEPENDENT Study – Check (x)
Practicum: Seminar:

d. Course Title: Building Systems Applications (Limit to 30 characters/spaces.)

e. College Code: TE f. Department Code: CTMG
Credit Hours: Check (x) type and enter maximum and minimum hours in boxes.

g. Type: Variable Fixed h. Minimum Credit Hours 3 i. Maximum Credit Hours 3

j. May Be Repeated for Added Credit: Check (x) Yes No

k. Levels: Check (x) Undergraduate Graduate Professional

l. Grade Method: Check (x) Normal Grading Credit/No Credit only (Pass/Fail)

m. Does proposed new course replace an equivalent course? Check (x) Yes No

n. Equivalent course: Prefix Number See instructions on Replacement courses.

o. CATALOG DESCRIPTION – Limit to 75 words – PLEASE BE CONCISE.

Awareness of heating, ventilating, air conditioning, water systems, fire protection, electrical distribution and lighting for buildings. Topics will cover systems integration, energy effects and sustainability on planning, detailing and construction of buildings.

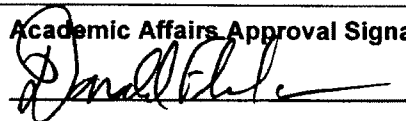
p. Term(s) Offered: Spring and Fall (See instructions for listing.) q. Max. Section Enrollment: 32

r. Prerequisites/Co-requisites/Restrictions: (If none, leave blank.) Limited to 100 spaces. BCTM 223, ENGL 150.

UCC Chair Signature/Date:

_____ / /

Academic Affairs Approval Signature/Date:

 10/2/07

To be completed by Academic Affairs Office: - Standard & Measures Coding and General Education Code

Basic Skill (BS) General Education (GE) Occupational Education (OC) G.E. Codes

Office of the Registrar use ONLY

Date Rec'd: _____ Date Completed: _____ Entered: SCACRSE __ SCADETL __ SCARRES __ SCAPREQ __

Ferris State University
College of Engineering Technology

Course Outline

Course: CONM 390 Building Systems Applications

Credits: Three Hours

Contacts: Three hours per week

Course Description: Awareness of heating, ventilating, air conditioning, water systems, fire protection, electrical distribution and lighting for buildings. Topics will cover systems integration, energy effects and sustainability on planning, detailing and construction of buildings.

Course Prerequisites: BCTM – 223, ENGL 150

Required Textbook: “Mechanical and Electrical Systems For Buildings” by William K. Y. Tao and Richard R. Janis (Prentice-Hall).

Required Materials: Scientific Calculator
Pencil, Eraser, Scales

Supplemental Materials: Independent Research of Codes and Reference Guides

Student Learning Goals

Upon completion of each instructional unit the learner will be able to:

1. understand the basics of electrical, plumbing, mechanical and fire protection systems.
2. describe water, sanitary and storm sewers for water management and environmental concerns.
3. approach energy management from a sustainable perspective.
4. evaluate building planning from systems integration, energy considerations, detailing and construction.
5. describe various alternative electrical energy methods

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College of Engineering Technology

Course Outline

Instructional Unit Topic Descriptions and Time Allocations

NO.	Unit Topic Description Summary	Lecture Hours	Lab Hours
I.	Introduction	1	
II.	Water Management	9	
III.	Heating, Ventilating & Air Conditioning for Comfort	6	
IV.	Lighting	3	
V.	Energy Management	8	
VI.	Fire Protection Systems	3	
VII.	Electrical Systems	9	
VIII.	Field Trips	2	
IX.	Examinations, Assessments and Holidays	4	
	Total Hours	45	

Course Outline	
I.	<p>Introduction</p> <p>Explain the course objectives and syllabus.</p> <p>Specify the assignment procedures.</p>
II.	<p>Water Management</p> <p>Know how piping systems are classified</p> <p>Understand pumps and pump curves</p> <p>Know basic application of valves</p> <p>Evaluate building water flow and pressure</p> <p>Size and plan DWV pipe using wfsu method</p> <p>Define a Storm Drain system</p> <p>Explain the use of a "green" roof and rain gardens and pervious paving</p> <p>Evaluate water saving fixtures</p> <p>Develop a water conservation plan</p> <p>Explain a domestic hot water system</p>

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College of Engineering Technology

Course Outline

III.	Mechanical Systems Identify the environmental variables relating to comfort Read, apply and interpret the psychometric chart Develop U factors for building assemblies Know control concepts for heating and cooling systems Explain the refrigeration cycle and cooling methods Describe various heating systems and fuel sources Know the components of air handling equipment Classify types of solar heating
IV.	Lighting Select low energy lighting Explain the use of natural lighting Describe methods of evaluating light pollution
V.	Energy Management Investigate current sources of energy Report on energy saving methodology Compare energy star appliances
VI.	Fire Protection Systems Describe the various types of fire protection systems Understand alarm integration in buildings Identify the components of commercial and residential fire protection system
VII.	Electrical Systems Review electrical fundamentals Describe various building distribution equipment Design an electrical layout for a building Select appropriate electrical materials Develop the integration of photovoltaic's Identify and classify types of wind generators Evaluate the use of batteries Explain the process of Net Metering
VIII.	Field Trips
IX.	Examinations and Assessments