Course Material Submission Form
OAN Match Definition Form

Today's Date:	May 24, 2007

Use this table to specify institutional data	
College/University:	Stark State College of Technology
Name and title of individual submitting on behalf of the college/university	
Name:	John Zeit
Title:	Associate Professor
Address:	6200 Frank Ave, NW, Canton, Ohio 44720-7299
Email:	jzeit@starkstate.edu
Phone:	330-966-5461 ext 4384
Fax:	330-966-6585

Indicate the reason for this submission:

☐ New Course Match
x Revised Materials - Faculty review panel requested clarification
☐ Revised Materials - Institution submitting additional information
☐ Revised Materials - Course content revised by institution, including situations of both content and credit hour change
☐ Revised Materials – Other

Describe specific revisions being made for "Revised Materials" submissions:
Including additional information on Instructional plans and student learning outcomes .

Institutional Notes to Faculty Panel (the institution is encouraged to add any additional clarifications for this submission):

Table 1 – Use this table to describe the course match for which materials are being submitted for the first time or revised.

Proposed effective year and term of match (Final effective date will depend on actual approval of match by faculty panel. Effective Year and Term is the first term in which students taking the course will receive matching credit.)

Semester institutions complete this row:

2006 Academic Year ☐ Summer X Autumn ☐ Spring

Quarter institutions complete this row:

20 Academic Year ☐ Summer ☐ Autumn ☐ Winter ☐ Spring

Ohio Articulation	**OET 016**

Number (OAN) (Use a separate form for each OAN.):	
Number of courses in the match:	1 (up to 10)
Current status of match:	☐ First time submission ☐ Approved ☐ Submitted ☐ Disapproved ☐ Error X Resubmitted ☐ Pending ☐ Error with enrollment ☐ Not submitted

Course or Courses being matched to or currently matched to the OAN listed above. (Course Numbers must be exactly what will appear on a student's transcript.):		**Course Number**
	1.	CET 121
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	

Table 2 - Use this table to submit course materials for the first time or to revise previously submitted course materials. You must submit each course in a separate form, repeating the match definition information in Table 1 above for each form submitted.

Course Number. **(Course Numbers must be exactly what will appear on a student's transcript.):**	CET 121	**Course Title**:	Building Materials and Construction Methods

Hours **(be sure that the hours for this course matches the hours in the OAN.)**

3 **Semester Hours** ☐ **Quarter Hours**

Total Credit Hours	3	**Lecture Hours**	3	**Laboratory Hours (if applicable)**	1

Course Placement in Major:	X Major Requirement ☐ Major Elective ☐ Other

Pre-Requisite Course work (if applicable) (Be sure this is consistent with the OAN definition):None

Catalog/Course Description:
CET121
BLDG MAT & CON MET
3 Credit Hours
This course familiarizes the student with the basic materials of construction according to their physical properties, durability and suitability for use under varying conditions. Use of materials in combination with one another and in the finished product will be examined both verbally and graphically. Emphasis is placed on material selection according to given criteria.

Texts/Outside Readings/Ancillary Materials (Be sure that the text meets performance expectations)**:** Fundamentals of Building Construction ; Allen and Iano; Fourth Edition; Wiley

Course Objectives and/or Plan of Work:
(Provide a clear indication of how the course objectives align with the matched OAN's learning outcomes. This will facilitate the faculty panel course review process.)

Building Materials and Construction Methods
Course Outline and Learning Objectives

1. Introduction and General Conditions (2 hours)

    a. Be able to identify the members of the building team and their responsibilities
    b. Identify methods of remuneration to designers and contractors.
    c. Identify the 3 construction document types (drawings, specs, agreement)
    d. Define purpose of zoning , its basic elements, and procedure for obtaining variance
    e. Recognize other regulatory boards and commissions
    f. Define purpose of building codes, local officials, and model codes
    g. Recognize relationship of reference standards and test labs to the code

2. Site (1 hours)
    a. Recognize prime considerations in choice of a site

3. Soils (4 hours)
    a. Define properties of Fine & Coarse soils according to:
        1. Particle size
        2. Void ratio
        3. Permeability
        4. Cohesiveness
    b. Define optimum moisture content
    c. Recognize soil water and its affect on behavioral changes in the soil
    d. Recognize the problems with expansive soils
    e. Know consolidation techniques
    f. Know soil modification techniques
    g. Know the relationship between excavators, soils engineers, & architects
    h. Recognize the relationship between soil composition and excavating ease.

4. Foundations (2 hours)
    a. Know the 3 basic foundation types (shallow, pile, caisson) and the soil conditions that indicate their use.
    b. Recognized the loads that are associated with each
    c. Recognize comparative costs

5. Wood (6 hours)
    a. Recognize material availability and local usage
    b. Define coniferous and deciduous treed as softwood and hardwood
    c. Recognize how the growth of the material affects its strength
    d. Recognize the properties of lumber below the fiber saturation point
    e. Recognize the differences in milling techniques, their affect on production, and their relationship to moisture content
    f. Define how seasoning affects the product
    g. Define how growth characteristics & seasoning defects affect strength
    h. Recognize grading- visual and MSR
    i. Recognize standard nominal and actual dimensions and sizes
    j. Compare plywood and other engineered woods to lumber in terms of utility, strength, installation processes, and cost

6. Masonry (6 hours)
    a. Recognize the basic mortar types
    b. Recognize the basic brick types
    c. Use proper terminology as it applies to
        1. Brick faces
        2. Joint types
        3. Bonds
    d. Recognize spanning elements- lintels, arches, vaults, domes
    e. Be able to design brick veneer wall construction for:
        1. Moisture control- flashing weepholes, air spaces
    f. Recognize the proper use of CMU as a structural element
    g. Recognize proper placement of reinforcement in CMU for horizontal joint reinforcing, pilasters, bond beams

7. Steel (6 hours)
    a. Recognize steel in its historic perspective
    b. Recognize different steel types according to:
        1. Mild Carbon Steel
        2. High strength/low alloy
        3. Stainless
    c. Be able to differentiate between connectors (bolts, rivets, welds) and where they are best used
    d. Differentiate between Connection types (framed shear, moment) by their configuration and loads that they resist.
    e. Use proper terminology as it applies to steel construction

8. Concrete (6 hours)
    a. Recognize the cement types and what they are used for
    b. Differentiate between aggregates according to types, size, and application
    c. Be able to discuss mixing water purity requirements
    d. Identify what conditions might indicate the use of admixtures
    e. Recognize that the water to cement ratio has critical strength ramifications

f. Curing- Time/strength matrix
g. Reinforcing – bars and WWF
h. Placing sequences, procedures, and techniques
i. Precast concrete- prestressed, pretensioned, posttentioned, construction methods

Building Materials and Construction Methods
Course Topic Outline

9. Moisture and condensation (2 hours)
   a. Recognize the relationship between temperature and relative humidity
   b. Understand the principles of condensation
   c. Identify the causes and major areas of concealed condensation in buildings
   d. Recognize the relationship between moisture retarders and insulation
   e. Identify how ventilation relieves problems with concealed condensation

10. High slope roofing (1 hours)
    a. Identify the different types and materials used in shingles
    b. Demonstrate a knowledge of shingle terminology
    c. Identify where flashing should be used

11. Low slope roofing (4 hours)
    a. Recognize how drain placement relates to roof failures
    b. Identify flashings as a major area of roof system failure
    c. Identify the materials of a standard roof configuration and their placement
    d. Identify components and construction methods for built-up roofing
    e. Identify components and construction methods for single-ply roofing
    f. Identify the advantages of a protected membrane system
    g. Identify roofing accessories- vents, drains, expansion joints, scuppers, scuttles
12. Insulation (1 hour)
    a. Heat flow and resistance
    b. Flexible insulation
    c. Rigid insulation
    d. Foamed –in – place insulation
    e. Loose fill insulation

13. Glass and windows (2 hours)
    a. Identify the types of glass- sheet, float, plate
    b. Know the types of safety glass- tempered, wire, laminated
    c. Know code requirements for the use of safety glass
    d. Identify what constitutes insulating glass
    e. Recognize different types of architectural glass
    f. Know the basic window types
    g. Recognize window catalog listing and window schedules

Building Materials and Construction Methods
Course Topic Outline

14. Doors and frames (2 hours)
    a. Identify wood door types and styles
    b. Demonstrate knowledge of hollow metal doors and frames
    c. Recognize fire resistance ratings and their relationship to code requirements
    d. Recognize builders hardware and how it relates to egress requirements

15. Finishes (2 hours)
    a. Recognize fire resistance ratings of partitions and associated testing
    b. Recognize drywall types and assemblies- wood and metal stud, and their fire resistance ratings
    c. Identify acoustical ceiling pads, suspension systems, & anchorage
    d. Recognize resilient floor materials and types
    e. Identify carpet fire safety requirements

16. Study of the system for light wood framing (2 hours)
    a. Fitting together the parts of the foundation
    b. Light wood floor framing
    c. Light wood wall framing
    d. Insulation
    e. Roof framing and insulation

17. Study of the masonry and steel joist systems (2 hours)
    a. Slab on grade and associated foundations
    b. Concrete masonry bearing wall construction and reinforcing
    c. Steel and open web joist roof construction and bracing
    d. Roof wall intersections and flashing

<u>Out of class individual study projects</u>

Paper on Green Architecture and Engineering

<u>Projects (2 hours class time for evaluation)</u>

The Cardboard Chair Project

The Toothpick Support Projects

Description of Assessment and/or Evaluation of Student Learning (The assessment plan needs to be appropriate for the expected rigor of the course) : Assessment utilizes written quizzes (9) and hands-on projects such as the cardboard chair and toothpick structure. A final exam is multiple choice with a graphic demonstration of construction methods using wall sections.

Master Syllabi and Working Syllabi (if both are used):

STARK STATE COLLEGE OF TECHNOLOGY
CIVIL ENGINEERING TECHNOLOGY
COURSE SYLLABUS

COURSE DESCRIPTION:
The study of the basic materials of construction and their uses in the completed project will be the major areas of concentration. The nature of the materials, their strengths, standard sizes, standard designations, and relative costs will be investigated along with methods of joining the materials together into building systems. Attention will be given to material deterioration, moisture penetration, thermal flow, and methods of preventing these problems in systems design.

COURSE OBJECTIVES:
Upon completion of the course, the student should have a basic understanding of the common materials of construction and how they fit together to comprise the total building.

COMPETENCY SKILLS:
Technical skills should be demonstrated by the student's ability to join together materials in a logical manner and then demonstrate communication skills in the graphic presentation of a wall section sketch. Computer skills will be developed with the usage of the Web CT program and presentation skills will be practiced in project presentation.

COMPUTER APPLICATIONS:
This course is an 0n-line assisted course. The students should access the Web CT program from the College internet site. There students will find notes, links to other sites, test aids, and assignments.

PROJECTS:
Students will be required to build a cardboard chair. Additionally, a toothpick structure may be submitted and tested for extra credit. Refer to the web site for specifications on these projects and their due dates.

PRESENTATIONS:
Each of the projects above will require student presentation so that the other students may be apprised of the design intent and application.

TEXTBOOKS:
Fundamentals of Building Construction ; Allen and Iano; Fourth Edition; Wiley

NOTE: The student is responsible for lecture material and material in the text relating to lecture. No make-up work will be allowed without prior arrangement. The course content and syllabus are subject to change based on the individual needs of the class.

Additional Documentation:

Essential TAG Learning Outcomes

1) **Demonstrate Basic understanding of architectural blueprints.**
   This outcome is achieved through the student taking courses in either Interpreting Construction Documents (CET 223) or Architectural Drafting I (CET 122).

2) **Understand the terminology related to the building construction**
   Throughout the course, students are required to use the proper terminology for the materials studied: for instance 3a and 6c of the course learning objectives.

3) **Identify the people involved in the construction industry**
   The introduction to the course familiarizes the student with the "players in the game". Further discussion into the use of building materials introduces the participants to the specialized areas of the industry. (learning objectives 1a & 2g for example).
4) **Know the origin, development and use of common building materials.**
   Each material discussed is prefaced by a discussion of its history and how it developed into its present form. The use of the materials is integral to the discussion of them. They are discussed according to comparative advantages and disadvantages, costs, difficulty of use, etc.
5) **Compare methods of construction used in buildings and heavy and highway construction.**
   The comparison of heavy construction and light construction is made on a continuous basis. For instance, learning objectives 4a and 4b cover this in foundations. Learning objectives for steel (section 7) include different types of connections which would not be Applicable to light construction.

OBR Use

Approved-Effective Date	
Pending (i.e. Additional Information Requested)	
Disapproved	
Today's Date	

Course Material Submission Form
Instructions and notes

1. Submit completed forms to atpanels@regents.state.oh.us.
2. Use this form to define course matches and to submit new or revised course materials for faculty panel review. Please do not submit a form for multiple OANs or Courses.
3. For course renumbering and credit hour revision, remember to withdraw the old match.
4. For course renumbering and credit hour revision, you may want to include information about how the new numbers relate to the old in the Institutional Notes to the Faculty Panel.
5. Click check boxes to check the item. Text fields will expand as you enter information. Press tab to move forward through form. Press Shift-tab to move backward. Note that these tables are implemented as MS Word tables. Keep that in mind as you are copying and pasting between your syllabi and this form. It is possible to paste tables as nested tables. Use the Edit Menu "Paste as Nested Tables" selection.
6. Once you are done entering your information, save the data file. Under the File menu, choose "Save as" and then enter the name (no spaces!) of the file using the following naming conventions:

    a. For course material submissions: **Institution-OAN-Course Number-Sequence-Version. Institution** is the 4 character HEI institution designation. **OAN** is the Ohio Articulation Number whose match is being defined or revised. **Course Number** is the **transcript** course number. **Sequence** is an indication of which course of a multi-course match is addressed in this form. The sequence is of the form (n of m) for an m-course match. For example, 1 of 1 for a single course match or 1 of 2 and 2 of 2 for a 2 course match. **Version** is a number indicating the revision number of this submission. Start with "Ver1" for the first time submission and include the "Ver".

    Example:

    If you are submitting course materials for Rhodes Community College MATH110 for OMT005 the name of the file would be LMTC-OMT005-MATH110-(1 of 1)-Ver1.

    If you are submitting course materials for Rhodes Community College MATH111 and MATH112 for OMT006 the name of the files would be LMTC-OMT006-MATH111-(1 of 2)-Ver1 and LMTC-OMT006-MATH112-(2 of 2)-Ver1.

7. Course materials must be submitted according to timelines below:

Considering the submissions of **new** courses for TAG matches, our goal is to work toward a timeline as follows:

Submit Course Material:	Start of Term 1
Faculty Panels Review Submitted Courses:	During Term 1
Approved course is effective:	Start of Term 2
Approved course is matched for transcript processing:	Term 3

A new match will have to be approved according to the timeframes below:

Course Approval Sample Timelines

Quarter Institutions

	Summer	Autumn	Winter	Spring
Course Material Submitted for Review	By 6/1	By 8/15	By 1/1	By 3/1
Faculty Panel Reviews Completed	By 8/1	By 12/31	By 2/28	By 5/31

Semester Institutions

	Summer	Autumn	Spring
Course Material Submitted for Review	By 6/1	By 8/15	By 1/1
Faculty Panel Reviews Completed	By 8/1	By 12/31	By 5/31

8. If you want to submit supplementary supporting documentation, you may do that. Simply send the file along with this form and name the supplementary file **Institution-OAN-Course Number-Supplement. Institution, OAN,** and **Course Number** are as described in Number 6 above. Include the word **"Supplement".** Just be sure to reference the supplement from the appropriate spot in this document.
9. Remember that all institutions are required to have at least one course match for each OAN in all TAGs for which they have corresponding programs.
10. This form should be used for all submissions or resubmissions starting immediately.
11. If you encounter problems or have questions, please contact any of the individuals listed below:

    Jim Ginzer (614) 752-9486 jginzer@regents.state.oh.us
    Sam Stoddard (614) 752-9532 sstoddard@regents.state.oh.us
    Brett Berliner (614) 466-2004 bberliner@regents.state.oh.us