

Documentation: Curriculum Matrix, Coursework and “Closing the Assessment Loop”

Professor Frederick Gould
Roger Williams University

This presentation will provide a strategy on how, with your faculty, to properly document curriculum matrix coverage, course content, and “closing the loop” on program assessment

Presentation Outline

1. Curriculum Matrix
2. Course Content
3. Program Assessment

Curriculum Matrix

Visiting team must verify that every EEI (topical content) is covered in the program

Steps:

- Develop Matrix with faculty
- Set up notebooks to organize EEI content
- All faculty receive “course sort” memos
- All “evidence” submitted with cover letter

**Courses on Horizontal Axis
Subject Area or Topical Content on
Vertical Axis**

General Education Requirements	Math & Science	Business & Management	Construction and Construction Science
CORE 102 - His/Modem World	CHEM 191 - Principles of Chemistry & Lab	ACCTG 201 - Financial Accounting I	CNST 100 - Intro to Const. Mgmt.
CORE 103 - Human Behavior	MATH 131 - Applied Pre-Calculus	ECON 102 - Economics	CNST 116 - Comp. Apps. for CM
CORE 104 - Lit/Phil & Ascent of Ideas	MATH 124 - Basic Statistics	MKRT 200 - Marketing Principles	CNST 130 - Plans, Specifications, and Building Codes
CORE 105 - Artistic Impulse	MATH 207 - Applied Calculus	MGMT 200 - Management Principles	CNST 200 - Const. Meth/ Mat & Lab
CORE Sequence and Senior Seminar	PHYS 201 - Physics I with Calculus & Lab	PL&T 221 - Law of Contracts	CNST 201 - Adv. Const. Meth/ Mat & Lab
COMM 210 - Intro to Speech Comm.		Business Management Elective	CNST 250 - Construction Equipment
WTNG 102 - Expository Writing			CNST 260 - Construction Estimating & Scheduling
WTNG 210 - Critical Writing			H.S. 416 - Construction Law
			CNST 302 - Surveying & Lab
			ENGR 210 Engineering Mechanics (Statics)
			CNST 304 - Structures II
			CNST 321 - Advanced Building Estimating
			CNST 445 - Construction Project Management & Safety Lab
			CNST 450 - Construction Planning & Scheduling
			CNST 455 - Mechanical / Electrical Design
			CNST 473 - Construction Project Control
			CNST 480 - Construction Management Capstone

5 Construction (20 Semesters / 30 Quarters) 300 Inst. Hrs.										29	27	6	2	2	29	45	44			44	42	44		42	24	
5.1	Construction Estimating (3 Semesters / 4 Quarters) 45 Inst. Hrs.										12	3			9	25				42			2		4	8
5.11	Types of Estimates & Uses															X				X						
5.12	Quantity Takeoff											X				X				X						
5.13	Labor & Equipment Productivity Factors														X	X				X						
5.14	Pricing & Price Data Bases									X					X	X				X					X	
5.15	Job Direct & Indirect Costs														X	X				X				X	X	
5.16	Bid Preparation & Submission																			X	X		X	X	X	
5.17	Computer Application									X					X					X				X	X	
5.2	Planning & Scheduling (3 Semesters / 4 Quarters) 45 Inst. Hrs.									8	2				3	20							42		5	8
5.21	Parameters Affecting Project Planning															X					X			X	X	
5.22	Schedule Information Presentation									X						X					X			X	X	
5.23	Network Diagramming & Calculation with CPM														X	X					X			X	X	
5.24	Resource Allocation & Management										X										X			X	X	
5.25	Impact of Changes																				X			X	X	
5.26	Computer Application									X											X			X	X	
5.3	Construction Accounting & Finance (1 Semester / 1.5 Quarters) 15 Inst. Hrs.										7				9						2				6	
5.31	Cost Accounting & Industry Formats																								X	
5.32	Fixed & Variable Costs; Insurance, Bonding, Marketing, General, and Administration Expenses																								X	
5.33	Bidding & Procurement Practices																								X	
5.34	Record & Report Practices																								X	
5.35	Capital Equipment, Depreciation, & Expensing									X						X										
5.36	Forecasting Cost, Cash Flow Requirements									X						X									X	
5.37	Payment Processes & Time Value of Money									X						X									X	

Matrix as developed by faculty

Notebooks Setup



Topical Content					Contributing Courses (CNST unless noted)
Note-book	Number	Title	Sub-number	Subtitle	
1	1.1	Communications (oral and written)			100, 445, 450, 475, 480
2	1.2	Ethics			100, 321, 445, 475, 480, PLS 436
3	4.1	Design Theory (Structural)			200, 201, 304, 455, ENGR 210
4	4.2	Analysis and Design of Construction Systems	4.21	Civil	201, 304, ENGR 210
			4.22	Electrical	455
			4.23	Mechanical	455
			4.24	Structural	200, 201, 304, ENGR 210
5	4.3		Construction Graphics	4.31	Basic sketching and drawing
		4.32		Graphic vocabulary	130
		4.33		Detail hierarchies, scale and content	116, 130
		4.34		Notes and specifications, reference conventions	130
		4.35		Computer applications	116
6	4.4	Construction Surveying	4.41	Survey, layout and alignment control	116, 302
			4.42	Site organization and development	130, 302
7	4.5	Construction Methods and Materials	4.51	Composition and properties	200, 201, 250
			4.52	Terminology and units of measure	200, 201, 250
			4.53	Standard designations, sizes and graduations	200, 201, 250
			4.54	Conformance references and testing techniques	200, 201, 250
			4.55	Products, systems and interface issues	200, 201, 250
			4.56	Equipment applications and utilization	201, 250

Each faculty member received
for each course

CNST 321
Advanced Building Estimating
Professor xxxxx

Course Requirements:

- General Requirements
 - Ethics
- Construction
 - Types of Estimates & Uses
 - Quantity Takeoff
 - Labor & Equipment Productivity Factors
 - Pricing & Price Data Bases
 - Job Direct & Indirect Cost
 - Bid Preparation & Submission
 - Computer Application for Estimating

Cover letter for faculty submitted EEI Examples

Topical Content Course Reporting Form

Course:

Type of Assignment:

- Test
- Syllabus Notation
- Paper
- Project
- Homework
- Other (Explain)

Briefly explain the nature of the assignment and how it addresses the topical content:

Course Documentation

Important for visiting team to evaluate the content for each course with an eye to currency, appropriateness, and rigor.

2 Notebooks per course to include:

Notebook 1

Course Administrative Instructions

Course Syllabus

Course Assessment Report

Exams

Quizzes

Final Grades

Notebook 2

Graded Homework

Technical/Lab Reports (if appropriate)

Oral/Written Reports (If appropriate)

All graded work includes:

Assignment

Instructor Solution

Outstanding student example

Good student example

Poor student example

Assessment Plan

Visiting team needs to see evidence of continuous improvement – closing the loop in a systematic manner. Assessment needs to be institutionalized.

School (Prepared by Dean)

- Terminology
- RWU Mission
- School of Engineering, Computing, and Construction Management (SECCM) Mission
- SECCM Objectives
- Constituencies
- SECCM Change Process
- Assessment Instruments

Program (Prepared by Coordinator)

- Curriculum
- Program Objectives
- Program Outcomes
- Outcomes “mapped” to Objectives
- Metrics “mapped” to Outcomes

Assessment Instruments Used

Course Binders

AC Exam

Club Reports

Alumni Survey

Senior Exit Interviews

Graduate Employer Interviews

Advisory Board

Student Competitions

Job Placement Surveys

Capstone Project

Faculty course assessment reports

From Assessment Plan

Outcome c: an ability to plan, organize and control a construction project	
Metrics Associated with Outcome c:	Where Measured
<p>1. 100% of Construction students participate in a Capstone Project Class that involves a semester long industry sponsored project that demonstrates their ability to successfully plan, organize and control a project.</p>	<p>Capstone Project Juror Evaluations and/or Transcript Review</p>
<p>2. Employment Interviewers rate applicants proficient for internship and permanent placement in the applicant's ability to plan, organize and control a construction project. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.</p>	<p>Employer Interview Survey</p>
<p>3. Employers rate proficient RWU Construction Management hires in their ability to plan, organize and control a construction project. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved</p>	<p>Employer Survey</p>

Need strong faculty support – I rely on the following faculty reports:

CM Club report

AC Exam report

Internship/Externship report

Capstone Project report

Senior Exit Survey Report

Alumni Report

From Annual Assessment Report

Outcome d: an ability to lead and/or function as a member of a team			
Metrics Associated with Outcome d:	Where Measured	Met	Comments
1. 100% of students participate as a team member as they complete their Capstone project. Each team member brings different construction experiences to the project.	Transcripts Capstone Project juror evaluations Course Assessment Report	Yes	
2. 100% of all Construction students will participate in the university CORE sequence and University Senior Integrative Experience.	Transcripts	Yes	
3. At least 50% of construction courses will give students the opportunity to work on collaborative team projects.	Course Binders Course Assessment Report	Yes	
4. At least two student-led teams will participate in the Associated Schools of Construction Region 1 student competition	Student Competitions	Yes	
5. At least 75% of construction management students will have held a construction related summer position, internship or co-op, or construction management work study related position by the time of graduation.	Senior Exit Survey	No	Only 46% per this year's senior exit survey.

Program Assessment (Annual)

Dean Prepares

- Executive Summary
- Organization Leadership
- Accreditation Actions
- Faculty and Staff
- Students
- Budget
- Facilities & Equipment
- Section Enrollment Data
- Student Course Survey Results
- Planning and Assessment

CM Coordinator Prepares

- Executive Summary
- Introduction
- Analysis of Evaluation Instruments Data
- Program Assessment
- Assessment of Previously Implemented Program Changes
- Discussion of Recommended Program Changes
- Revised Program Outcomes and Metrics

Assessment process can be viewed as a “living” history

Final Thoughts

Full faculty participation and support is necessary

A lot of work to set up, but once learned and “operationalized” the process has become easier

Upper Administration leadership and support is very important

Questions?