

BCN 6641 Value Engineering

M.E. Rinker, Sr., School of Building Construction

University of Florida

3 credits

Instructor: Professor Robert Ries

306 Rinker Hall
rries@ufl.edu
352 273 1155

Office hours: As scheduled or by appointment

Description

BCN 6641 Value Engineering introduces students to the fundamental principles of emerging areas in the life cycle of the built environment. This course teaches a framework, methods, and tools that can be applied to decision making in the design, construction, operation, and maintenance of the built environment, particularly when quality, cost, and reducing the environmental impact of construction and construction activities is a goal. The course includes value engineering principles, life cycle cost and decision analysis. Topics include the principles, case studies of applications, methods, and software.

Attendance and class participation

Required at all class meetings.

Assignments and final project

The principal course work will center around Value Engineering projects. Assignments will be given periodically throughout the class.

Week 15: Final presentations due. Approximately 20 minute Powerpoint presentation including project objectives and description, scope of analysis, overview of the value engineering procedure and value analysis alternatives.

Week 16: Final report due. Note: digital submission of document (Adobe Acrobat *.pdf format) required.

Grading

Final project report 30% and presentation 5%; Mid-term project 20%; Exams 25%; Assignments 20%; class participation may be considered in the final grade.

The following grading is based on percentage of points earned:

A: 90-100, B+:87-89.9, B: 80-86.9, C+: 77-79.9, C: 70-76.9, D+: 67-69.9, D: 60-66.9, E: 59 or below

Honor Policy

It is Rinker School policy that any incident of cheating, copying, signing rosters for others, or other attempts to deceive will be penalized by course failure.

Note

The syllabus will be followed to the best of the instructor's ability, but the instructor reserves the right to adjust the syllabus as required.

Course Website: <http://lss.at.ufl.edu>

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Class text:

- 1 Younker, DL, 2003, Value Engineering. Marcel Dekker, New York, NY.

Reference:

- 2 Dell'Isola, AJ, 1997, Value Engineering: Practical Applications for Design, Construction, Maintenance, and Operations. RS Means, Kingston, MA.
- 3 Dell'Isola, AJ, Kirk, SJ, 2003, Life Cycle Costing for Facilities. Reed Construction Data, Kingston, MA.

Schedule

Week	Subject	Readings and reminders
1	Introduction Course overview	Reading: 1
	Defining value; overview of value engineering	Reading: 1, ASTM 1699 HW 1
2	Holiday - no class	
	Project Scope and Budget	Reading: 1, ASTM Uniformat
3	Project budget; capitalized value	Review: Cost estimating spreadsheet
	Capitalized value (continued)	HW 2
4	Determining value through cost, market, and income approaches	
		HW 3

Week	Subject	Readings and reminders
5	Exam 1	
	Models for value engineering	Reading: Risk modeling
6	Economic models: benefit/cost analysis; life cycle cost	Reading: 1, review BLCC Handbook 135 and Supplement
	Economic models: benefit/cost analysis; life cycle cost (continued)	HW 4
7	Function analysis and FAST diagrams	Reading: 1
	Function analysis and FAST diagrams (continued)	HW 5
8	Weighted evaluation and decision analysis techniques	Reading: 1
	Weighted evaluation and decision analysis techniques (continued)	HW 6

Week	Subject	Readings and reminders
9	Spring Break - no class	
10	Exam 2	
	Final project introduction	Reading: 1
11	Preparation phase	Mid-term project report due
	Information phase	Reading: 1 Preparation phase complete; evaluation criteria due
12	Function identification and analysis	
	Creative phase	Reading: 1 FAST diagram drafts due

Week	Subject	Readings and reminders
13	Evaluation phase	Creative phase complete; alternatives due
	Development phase	Reading: 1
14	Presentation phase	Drafts of cost and evaluation estimates of alternatives due
	Presentation phase	Draft final presentations due
15	Project presentations	Final presentations due
	Project presentations	
16	Project presentations	
	Project presentations	

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Note: Students with disabilities are encouraged to register with the Office for Student Services to determine the appropriate classroom accommodations. For students with print related disabilities, this publication is available in alternate format. For students with hearing disabilities trying to contact an office that does not list a TDD, please contact the Florida Relay Service at (1-800-955-8771 TDD).

For issues with technical difficulties for E-learning, please contact the UF Help Desk at: helpdesk@ufl.edu; (352) 392-HELP (4357); <https://lss.at.ufl.edu/>

UNIVERSITY POLICY ON ACADEMIC ACCOMMODATIONS:

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the "Get Started With the DRC" webpage on the Disability Resource Center site: <https://disability.ufl.edu/students/>.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Conduct Code at <https://sccr.dso.ufl.edu/process/student-conduct-code/>

The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student Honor Code. On all work submitted for credit by Students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

COMMUNICATION COURTESY: All members of the class are expected to follow rules of common courtesy in all email messages, discussions and other communication.

COURSE EVALUATION: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

ATTENDANCE POLICY: Required at all lectures. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

MAKE-UP POLICY: Missed assignments, quizzes, and exams can be made up with instructor's permission prior to assignment due date or quiz/exam date.

ASSIGNMENT POLICY: Assignments submitted after the late submission date without prior permission from the instructor will not be accepted.