

**BCN 4723/BCN 5729**  
**DESIGN-BUILD DELIVERY METHOD**  
**COURSE SYLLABUS**  
Course Policy and Procedures  
Monday, Wednesday and Thursday  
M,W,R, Period 6 (12:50 PM-1:40 PM) RNK 210

**SECTION:** 0602

**INSTRUCTOR:** E. Douglas Lucas, Ph.D., [doug1941@ufl.edu](mailto:doug1941@ufl.edu), Tele: 273-1168, Rinker 321 Class

**CREDITS - 3**

**COURSE DESCRIPTION**

Theory and practice of design-build contract delivery method.

**PREREQUISITES BY ACADEMIC STANDING**

Junior/Senior Standing

**COURSE OBJECTIVES**

Upon completion of the course, students will demonstrate the ability to:

1. Analyze and understand an owner generated RFQ for Design-Build Services
2. Analyze and understand an owner generated RFP for Design-Build Services
3. Recognize the principles involved with team building for the purposes of creating a successful design-build team
4. Prepare a conceptual estimate based upon an owner generated RFP for Design-Build Services
5. Prepare a cost loaded schedule based upon an owner generated RFP for Design-Build Services
6. Perform a cash flow analysis in order to determine the line of credit/loan requirements for a project.
7. Demonstrate the principles of giving an effective oral presentation as a team
8. Identify the methods and principles involved with LEED Certification
9. Prepare a sound effective written response to an owner generated RFP for Design-Build Services
10. Prepare and give an effective oral presentation of a team response to an owner generated RFP for Design-Build Services
11. Understand the differences between the design-build delivery method and traditional design-bid-build methods

## COURSE TOPICS

Students will be tested and quizzed on all topics and assignments will be made to aid the student in understanding and applying the material. The course topics are listed and described below:

### **(1) The Evolution of the Construction Industry**

The student will be given a synopsis of the stages of development of the construction industry from early master-builders of ancient times through the evolution of segregated design and construction service methods that arose out of the industrial revolution. The topic will wrap up with the economic, social, political and legal factors of the last two decades that spurred a reemergence of the concept of the “master builder” and the subsequent development of the design-build construction delivery method.

**Demonstration of student learning:** Questions on Exam 1

### **(2) The Planning, Design, and Construction of Projects**

Topic will include the principles of the construction contract delivery methods of design-bid-build, CM-at-Risk, and Design-Build and the similarities and differences of these methods. The topic will also cover the major advantages of the design-build method.

**Demonstration of student learning:** Questions on Exam 1 and participation in group discussion of Design-Build Wastewater Treatment project

### **(3) Fundamental Characteristics of Design-Build**

This topic examines solicitation and basis of award, the types of design-build entities, performance specifications versus prescriptive specifications, the control of design, cost development and conceptual estimating and design-build contract issues.

**Demonstration of student learning:** Questions on Exam 1 and class discussion of Submarine facility Design-Build project case study.

### **(4) How Design-Build Services are Purchased**

Topic examines how companies prepare for a design-build facilities project; procurement processes of low-bid, qualifications-based selection and best value selection; the RFQ-RFP process; design as a competitive factor; the scoring of a design-bid proposal; and the owner selection of a contract type.

**Demonstration of student learning:** Questions on Exam 1, class discussion of Krispy-Kreme case study, and participation in classroom teams’ preparation of RFQ and RFP responses.

### **(5) To Submit or Not to Submit**

This topic addresses the factors to consider when deciding whether or not to respond to a design-build solicitation. Also will examine the steps involved in the response to solicitation.

**Demonstration of student learning:** Questions on Exam 2 and participation in class discussion of CALTRANS Office Building case study.

### **(6) Team-Building and Design-Build**

Topic addresses principles of team building and the importance in selecting members for a design-build team, teaming agreements, team culture fit, trust building, team member responsibilities, etc. Also addresses some of the factors that create team conflict including failed deadlines, poor communication and lack of direction.

**Demonstration of student learning:** Questions on Exam 2 and participation in NASA Moon Exercise.

### **(7) Developing Design-Build Estimates**

Topic will cover role of the estimator in design-build, progressive phases of estimating in design-build, cost as a element of design, designing to budget, developing the budget, developing contingencies and showing contingencies in the estimate.

**Demonstration of student learning:** Questions on Exam 2, preparation of student teams RFP estimate and participation in class discussion of San Diego Waterfront Hilton Hotel case study.

### **(8) Building Information Modeling (BIM)**

This topic will address the development and evolution of BIM and its application in estimations, simulations, scheduling, building energy analysis structural design, GIS integration, fabrication, erection, facilities management and forensic failure analysis.

**Demonstration of student learning:** Questions on Exam 3 and participation in class discussion of the case study, BIM and BEYOND.

### **(9) Principles of Effective Presentations**

Topic will examine in detail some of the basic principles of effective design-build oral presentations including types and effectiveness of presentation aids, organization and planning of presentation materials, irritable mannerisms and speech patterns, attention getting, answering questions and fluidity of handoffs between team presenters.

**Demonstration of student learning:** Questions on Exam 3 and preparation and presentation of student team design-build RFP response presentation.

### **(10) Managing the Design-Build Process**

Topic will address design-build as a process, managing design in design-build, partnering, and management of the proposal, post-award, design development, design-construct and post-construction phases of a design-build project.

**Demonstration of student learning:** Questions on Exam 4 and participation in class discussion on New York City Transit Railway Washing Facility case study.

### **(11) Developing a Preliminary Conceptual Design**

This topic will examine bubble-charts, functional analysis, proximity analysis, trip-frequency analysis and a variety of analytical tools to aid in the development of a preliminary conceptual design in response to a solicitation for a design-build RFP.

**Demonstration of student learning:** Questions on Exam 4 and participation in student team preparation of RFP response.

## **STUDENT OUTCOMES**

To demonstrate the knowledge and understanding of topics listed above by means of correctly answering questions posed in the form of tests, quizzes, and student team submittals and presentations

## **TEXTBOOKS**

**Required:** DESIGN –BUILD –DESIGN-BUILD ESSENTIALS. Jackson, Barbara J., Delmar, Cengage Learning, 2011

**Recommended Reading:** Design- Build- Planning through Development, Bear Jeffrey L., Loulakis, Michael C., and Wundram, Edward C.

## **GRADING**

The following items will be used in determining the student’s grade for the semester:

Four Exams @ 100 Points Each	400 Points - 25%
Research paper	200 Points – 12.5%
RFQ Response	200 Points - 12.5%
RFP Response	400 Points - 25%
Proposal Presentation	<u>400 Points</u> - 25%
<b>Total Possible Points</b>	<b>1600 Pts - 100%</b>

## **GRADING SCALE**

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar’s Grade Policy regulations at

<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Numeric Grade	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	0-59
Quality Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0

## **MAKEUP EXAM POLICY**

Those who advise the instructor of their need for a makeup exam at least 24 hours prior to the scheduled exam time will be allowed to schedule a makeup exam for a time at the convenience of the instructor.

## **HONESTY POLICY**

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others. On all work submitted for credit by students at the university, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid doing this assignment." The University of Florida maintains an honesty policy regarding cheating and use of copyrighted materials. Specific policies can be found at: <http://www.aa.ufl.edu/aa/Rules/4017.htm>

## **ACCOMODATION FOR STUDENTS WITH DISABILITIES**

Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

## **UF COUNSELING SERVICES**

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

## **SOFTWARE USE**

All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations

are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## EXPECTATIONS

- BCN 5XXX is an graduate course. Students are expected to comport themselves in a professional manner.
- In class, the students are expected to be courteous and respectful of the needs and views of other students and the instructor. No cell phone usage, reading of newspapers or other reading matter, or use of laptops will be allowed.
- The course material will be presented using class lectures, case studies, discussions, computer labs and guest speakers. Class attendance will be taken. Every attempt should be made to attend class.
- Since some of you are graduating seniors, the instructor is aware that the career fair and job interviews will occasionally make it impossible to attend. If you know in advance that you have one of these legitimate reasons for absence, please either verbally advise the instructor of the date of absence or do the same by email. Too many absences will hinder your learning process and make it harder to earn the grade that you wish to receive Other than the type of absences mentioned above or sickness, the instructor reserves the right to determine if an absence is excusable.
- Late submissions of assignments submitted late without justification will result in reduced credit. **Make UP TESTS ARE ONLY AVAILABLE WITH PRIOR CONSENT OF THE INSTRUCTOR.**
- The professor reserves the right to adjust the grade scale. Under no circumstances will a student's grade be lowered by this adjustment.
- For exams and in-class assignments, students are responsible for all material presented in class, all reading assignments, guest lectures, site visits, and handouts distributed in class or via the class website. **Note: Things said by the instructor, but which are not in the PowerPoint presentation, or written on the blackboard ARE part of the material from which exam questions may be pulled.**
- Students should NEVER begin gathering materials and packing backpacks before the instructor dismisses the class.
- No eating in the classroom
- Power points of the lectures will be posted on the instructor's website