**Construction Project Management**

BCN 5705C

T, R Period 4-5 (10:40 AM - 12:35 PM)

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Office hours are M/W between 2:00 - 4:00 PM, and by appointment.

**Course Description**:
Understanding the various forms of project delivery methods (Design-Bid-Build, Design-Build, and Construction Management) and the underlying principles for choosing the appropriate system. Recognizing the complexity of the preconstruction process including conceptual estimating and scheduling, life cycle costing, constructability reviews, value engineering, risk management and special contract requirements. Understanding management and administration of a construction project.

**Course Learning Outcomes (CLOs):**Upon completion of the course, students will demonstrate their ability to:

1. Understand project control processes by identifying the methods used to establish and maintain production, cost, and schedule control.
2. Identify the major elements of a quality control/quality assurance program.
3. Describe the underlying principles of the project delivery process.
4. Recognize the processes of construction risk management.
5. Employ electronic based technology to document and manage the construction process.
6. Analyze ethical issues faced by construction professionals.

Additional information on the BCN undergraduate learning outcomes is available at: <https://catalog.ufl.edu/ugrad/current/construction/ALC/building-construction.aspx>. For this course, the CLOs will be evaluated according to the table below.

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| --- | --- | --- | --- |
| **Course Learning Outcome (CLO)** | **Assignment(s)** | **Student Learning Outcome (SLO)** | **Percent students****passing with a 70% or higher** |
| *SACS* | *ACCE* |
| 1. | Project control methods | Exam #1 |  | 16 | 80% |
| 2. | Quality control and assurance | Exam #1 |  | 15 | 80% |
| 3. | Project delivery process | Exam #2 |  | 12 | 80% |
| 4. | Construction risk management | Exam #2 |  | 13 | 80% |
| 5. | Technology integration | Technology Presentations | 4 | 10 | 80% |
| 6. | Business ethical issues | Ethics Analysis | 5 | 6 | 80% |

*SACS = Southern Association of Colleges and Schools, ACCE = American Council for Construction Education*

**Required Texts:**

We use a variety of resources in this course, but most of the material comes from two required textbooks course, which is available electronically **for FREE** via the UF Library:

* *Construction Project Management: An Integrated Approach (3rd Ed.)*. Peter Fewings and Christian Henjewele. Copyright 2019. ISBN-13: 978-0815358657, Routledge.
* *Modern Construction Management (7th Ed.).* Frank Harris, et al. Copyright 2013. ISBN-13: 978-1118510216, John Wiley & Sons, Inc.

**Course Schedule:**

The goal of this course is to teach you to think like a project manager. In your previous courses, you have been taught the basics of construction materials and methods, scheduling and estimating techniques, and contract law, which all provide a strong starting point. This course, however, will encourage you to go one step further and train you to think critically and creatively to solve the types of problems encountered by project managers every day.

To achieve this goal, we will begin with the end in mind (i.e., the output of your work) and pull backwards through the delivery process. This structure is a bit unconventional, but my hope is that it will enable you to more clearly see the cause-and-effect relationship behind project management actions. Broadly, the class has three modules of four to five weeks each: (Module I) Project production management, (Module II) Business management, and (Module III) Company management.

A weekly schedule is provided below:

|  |  |  |
| --- | --- | --- |
| **Wk.** | **Topic\*** | **Assignment** |
| **1** | Course Introduction |  |
| Lecture: Quality Management | Read MCM Ch. 2, CPM Ch. 14 |
| **2** | Lecture: Productivity and Production Systems*Production Observation Assignment* | Read MCM Ch. 3, Ch. 5 |
| Lecture: Lean Theory and Workflow Planning | Read CPM Ch. 9 |
| **3** | Workshop #1: Parade of Trades |  |
| Lecture: Managing Resources and Equipment | Read MCM Ch. 4, Ch. 7 |
| **4** | Workshop #2: Resource Balancing |  |
| Lecture: Budgeting and Cost Control | Read MCM Ch. 6, CPM Ch. 5 |
| **5** | Workshop #3: Earned Value Management |  |
| *Production Observation Presentations* | Production Observation Report |
| **6** | Midterm Exam #1 |  |
| Lecture: Project Procurement | Read MCM Ch. 8, CPM Ch. 4, 10 |
| **7** | Workshop #4: Submittal Review |  |
| Lecture: Preconstruction Estimating and Planning | Read MCM Ch. 9 |
| **8** | Workshop #5: GCs Estimate / Risk Register |  |
| Lecture: Competing for Work | Read MCM Ch. 10 |
| **9** | Workshop #6: Bid Leveling |  |
| Lecture: Decision-Making TheoryWorkshop #7: VE Options Comparison | Read CPM Ch. 6 |
| **10** | *Spring Break (No Class)* |  |
| *Spring Break (No Class)* |  |
| **11** | Midterm Exam #2 |  |
| Lecture: Technology Systems*“Lunch and Learn” Technology Presentation Assignment* | Read MCM Ch. 17, CPM Ch. 13 |
| **12** | Lecture: Company Organization | Read MCM Ch. 14, CPM Ch. 7 |
| Workshop #8: Job Roles and Responsibilities |  |
| **13** | Lecture: Business Development | Read MCM Ch. 15, CPM Ch. 8 |
| Workshop #9: Negotiation Simulation |  |
| **14** | *Technology Presentations* |  |
| *Technology Presentations* |  |
| **15** | Closing Thoughts | Business Ethics Analysis |

\* Schedule is subject to change.

**Evaluation of Grades:**Two, 2-hour class meetings will be held each week. Typically, one meeting will be a lecture and the second will be a structured workshop assignment, which will ask you to apply concepts from the lecture in small groups. Finishing the workshop assignment may require additional time outside of class. Each workshop assignment will be graded. In addition, at the end of each workshop assignment, you will be asked to evaluate the other members of your group that assisted in preparing the submission.

Two midterm exams will be given throughout the semester.  These exams will be held in-person during class time and will be written and closed book.  The format of the exam questions may include any combination of short answer, essay, multiple choice, quantitative problems, and/or sketches. At least half of each exam will be in reference to a case study project.  One week prior to the exam, you will be given a case study project description.  You may prepare one 8.5”x11” sheet (one-side only) of supplementary information about the case, as well as any "pre-work" that you wish to perform, for use during the exam. *For example, if the case is describing a prefabricated metal building, you may want to search for details about the installation process and then add notes to your sheet summarizing the steps in that process.* Then, during the exam, you will be asked to apply your knowledge of the course material in reference to the case study project. You must turn in your one sheet of supplementary information upon completion of the exam.

Two additional assignments will be given in lieu of a final exam. The first assignment will be an analysis of multiple real world ethical breaches in the construction industry. The second assignment will be a short group presentation, structured as a “lunch and learn,” where your group will provide a training session to the class for a selected construction technology.

Final grades will be calculated based on the following weighting:

Mid-term Exam #1                                                        150
Mid-term Exam #2                                                        150
In-class Workshop Assignments (9 at 25 pts. ea.)      225
Production Observation Report and Presentation      75
Business Ethics Analysis                                                50
Technology Presentation                                              100

You are responsible for addressing grades within one week of the grade being posted on the course’s e-Learning website. After one week, the grade stands for the class regardless of cause or circumstance.

# **Grading Policy:**

Final grades will be assigned according to the following scale. Divide the total points you earn by the total possible points to obtain your percent. Decimal points will not be rounded.

|  |  |  |
| --- | --- | --- |
| **Percent** | **Letter****Grade**  | **Grade****Points** |
| 93.0 - 100  | A | 4.00  |
| 90.0 - 92.99  | A- | 3.67  |
| 87.0 - 89.99  | B+ | 3.33  |
| 83.0 - 86.99  | B | 3.00  |
| 80.0 - 82.99  | B- | 2.67  |
| 77.0 - 79.99  | C+ | 2.33  |
| 73.0 - 76.99  | C | 2.00  |
| 70.0 - 72.99  | C- | 1.67  |
| 67.0 - 69.99  | D+ | 1.33  |
| 63.0 - 66.99  | D | 1.00  |
| 60.0 - 62.99  | D- | 0.67  |
|  0 - 59.99  | E | 0.00  |

More information on grades and grading policies at UF is available at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**Class Attendance and Make-Up Policy:**Attendance is strongly encouraged. You are responsible for all material presented in class, lecture notes on the course’s e-Learning website, handouts, guest speakers, and anything said or written by the instructor. Late assignments and essays will be accepted with 50% reduction of potential points, no later than the start of the next scheduled class. Make-up tests must occur within three days of the original exam date. Only one make-up exam is allowed per semester. Requirements for attendance, make-up exams, assignments and other work in this course are consistent with UF policies found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

**Students Requiring Accommodations:** Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/)](http://www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

# **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/](https://urldefense.proofpoint.com/v2/url?u=https-3A__ufl.bluera.com_ufl_&d=DwMFAg&c=sJ6xIWYx-zLMB3EPkvcnVg&r=y2HjEMjRMHJhfdvLrqJZlYczRsfp5e4TfQjHuc5rVHg&m=WXko6OK_Ha6T00ZVAsEaSh99qRXHOgMNFRywCoehRho&s=itVU46DDJjnIg4CW6efJOOLgPjdzsPvCghyfzJoFONs&e=). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>. 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/](https://urldefense.proofpoint.com/v2/url?u=https-3A__ufl.bluera.com_ufl_&d=DwMFAg&c=sJ6xIWYx-zLMB3EPkvcnVg&r=y2HjEMjRMHJhfdvLrqJZlYczRsfp5e4TfQjHuc5rVHg&m=WXko6OK_Ha6T00ZVAsEaSh99qRXHOgMNFRywCoehRho&s=itVU46DDJjnIg4CW6efJOOLgPjdzsPvCghyfzJoFONs&e=). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

**Class Demeanor:**It is expected that everything submitted for a grade will be professional, with correct spelling and grammar. The expectations and caliber of the work expected in this course are elevated to the level of the business community and evaluated against that baseline. When available, use software to produce your work. If your work product is considered unacceptable in the workplace, then it is unacceptable here. The goal is for all work to represent what you would submit to your immediate boss in a job scenario. If your boss won’t accept, then we won’t either.

This course has been taught for many years and as a result there may be a temptation to “rely on the work of others” for inspiration. Should the instructor determine that a student’s work is substantially similar to that of another (either past or present), the student may be subject to a rejection of that assignment and will be cited with an honor court violation. Similarly, the use of materials, worksheets, or data from previous semesters is considered cheating. Your work is subject to electronic verification by TurnItIn® or other technologies.

# **University Honesty Policy:**

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the 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.” The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions ([https://www.dso.ufl.edu/sccr/process/student-conducthonor-code/)](https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/). Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

**Counseling and Wellness Center**
Contact information for the Counseling and Wellness Center is available on the web at <http://www.counseling.ufl.edu/cwc/Default.aspx> or by phone at (352) 392-1575; and the University Police Department: (352) 392-1111 or 9-1-1 for emergencies.