**Safety Risk Management in Construction**

BCN4905/ Section 2023 - 28103

BCN5905/ Section SRM1-28104

Meeting Times:

Tuesday 8-9 Period RNK 225

Thursday 9th Period RNK 225

Instructor:

Andrew Wehle, Ph.D, STSC

312 Rinker Hall

(352) 294-0527

[wehleaj@ufl.edu](mailto:wehleaj@ufl.edu)

Course Communications:

Students can email me [wehleaj@ufl.edu](mailto:wehleaj@ufl.edu) or contact me through Canvas.

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| Office Hours | | |
| Mon & Wed | 3rd Period | 9:35am-10:40am |
| Thurs | 6th Period | 12:50pm-1:40pm |

Course Description:

The course content will include the identification, evaluation, and mitigations strategies used to eliminate/reduce/manage various risk exposures related to construction safety. Through lectures, case studies, class assignments, and practical exercises, students will learn how to identify, assess, mitigate, and monitor safety risks inherent in the construction industry. Topics include risk identification techniques, risk analysis methods, insurance implications, bonding impacts, workers compensation, design for safety, labor issues, scheduling, coordination, company culture, management standards, as well as current practices and innovations of safety risk management.

Learning Objectives and Student Learning Outcomes:

SLO 1. Understand the fundamental concepts of construction safety risk management

SLO 2. Identify types of safety risks including the direct and indirect impacts

SLO 3.Understand the differences between quantitative and qualitative methods for assessing safety risks

SLO 4. Identify and analyze various types of safety risks encountered in the construction industry

SLO 5. Develop skills in creating, implementing, and monitoring of safety risk mitigation measures and strategies for construction.

SLO 6. Understand the interconnectedness between the financial and human impacts of safety risk management

SLO 7. Analyze how risk management can/should be integrated for safety (design, quality control, commissioning, procurement, and other teams/processes).

Required Textbooks:

None

Course Schedule:

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| Modules |  |
| 1 | What is Risk in the Construction Industry.  Safety, Design, Schedule, Labor, Finance, Environmental factors.  Importance of risk considerations |
| 2 | Human Factors - Labor, Safety, and Design Issues  Importance of Labor, Dependence of labor, Labor shortages, Labor quality, Labor Productivity, Labor Training. Labor Turnover Investigate how certain designs can lead to more or less risk. Analyze how design & safety cross paths, and how it has changed over time |
| 3 | Safety Management Practices - Schedule Issues  Discuss how tight schedules affect safety and other conditions from a risk perspective. Commonly reported corners cut to meet schedule, and what can be implemented as a solution |
| 4 | Safety Management Practices- Coordination Issues  Miscommunication, Unclear directives from management, Insufficient safety protocols, Insufficient safety training, Poor safety culture. |
| 5 | Safety Management Standards- Poor Documentation  Insufficient paperwork management systems, hard to locate information (worker resources, contacts, procedures, etc.) |
| 6 | Company Safety Culture  Inconsistent & non standardized practices for workers and Subs, Drastic changes in PM and Superintendent management styles from site to site, turning a blind eye to meet schedule or cost quotas. |
| 7 | History of Risk Management in the USA  How did risk management in the construction industry change over time? |
| 8 | Insurance & Bonding  Compare different insurance requirements and methods. Examination of OCIP & CCIP type programs, |
| 9 | Methods of Safety Risk Management  Discuss current and some major past methods that the industry has used or adopted to mitigate and control risk, analyze pros and cons of the major/common methods such a s Matrix, Monte Carlo |
| 10 | Current Progress & Recent Changes to Incorporate a broader application of risk management.  Analyze how risk management can/should be integrated in design, quality control, commissioning, procurement, and other teams/processes |
| 11 | Future Safety Innovations and Developments (From a company management point of view)  Advanced employee training & certification, subcontractor prequalification requirements, improved scheduling and cost tracking systems, easier & simpler cross team collaboration and information sharing |
| 12 | Future Innovations and Developments (Technology)  Automation tools, new software developments, augmented reality tools, smart wearables, sensor/camera systems, AI use. |

Grading:

Class Assignments 15% of total grade

Class Presentations 15% of total grade

Quizzes 15% of total grade

Mid Term Exam 20% of total grade

Class Project 35% of total grade

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academicregulations/grades-grading-policies/>

**A=93-100; A- =90-92.9; B+ =87-89.9; B=83-86.9; B- =80-82.9;**

**C+ = 77-79.9; C=73-76.9; C- =70-72.9; D+ =67-69.9; D=63-66.9;**

**D- =60-62.9; E<60.**

**COURSE POLICIES**

Attendance

Class attendance is expected. Each unexcused absence will result in a 10 point reduction in the final grade. Excused absences are consistent with university policies in the undergraduate catalog ( <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx> ) and require appropriate documentation.

Make-up Work

If you need to miss class when a quiz or exam is being given, you will only be given a make-up quiz/exam if you:   
1) contact me ahead of time to let me know, and 2) provide appropriate documentation. Guidelines for acceptable and unacceptable documentation are:

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| --- | --- |
| **Appropriate Documentation** | **Inappropriate Documentation** |
| * A letter from the UF Student Health Care Center or the UF Counseling Center supporting your request and stating why you were unable to take the quiz/test * A letter from non-UF physicians, counselors, therapists, etc. supporting your request with specific language that addresses why you were unable to take the quiz/test * A police report, jury duty notice, or other official legal document that supports your case * Plane/bus/train tickets, turnpike toll receipts, or other travel documents that show you were called away from campus for an emergency on the day of the quiz/test * Funeral announcements, obituaries, or death certificates of relatives that clearly show your inability to take the quiz/test on that specific day | * Letters from friends, parents, or other relatives supporting your request * Letters from employers stating you had to work on the day of the quiz/test * Letters from student clubs, fraternities/sororities, etc. stating that you were involved with an event or activity on the day of the quiz/test * Statements from anyone suggesting that you may not qualify for employment, financial aid, housing, graduate or professional school, or other activities/opportunities if you do poorly in this class due to missing a quiz/test * Funeral announcements, obituaries, or death certificates of people whose relationship to you cannot be verified |

Make-up quizzes/exams must be taken in the office during my office hours on a mutually agreeable date as soon reasonable after the original quiz/exam date. Content will be similar, but not the same as the original quiz/exam. A student who misses a quiz or exam with appropriate documentation also has the option of asking that their final grade be calculated based only on assessments completed, instead of taking a make-up; the final decision is up to the instructor.

Deadlines

All projects must be turned in on the due date specified in class. Late projects lose one full letter grade for each day beyond the original due date.

**STUDENT CONDUCT/INTEGRITY**

Class Demeanor

All students are expected to arrive to class on time and behave respectfully and professionally toward fellow students and the instructor. There is no set dress code for this class unless a presentation is required; if so, then business casual rules must be observed.

Cell Phones

You may not use cell phones in this class. If your cell phone rings in class more than twice over the course of the semester, you will receive one absence from the course.

Headphones/Ear Buds/Air Pods

Please do not use these items while in class.

Academic Honesty

Students must follow University of Florida’s policy regarding plagiarism, cheating, and the use of copyrighted materials. Students are responsible for reading and abiding by the University’s Student Code of Conduct (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>).

All students registered at the University of Florida have agreed to comply with the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.” In addition, on all work submitted for credit the following pledge is either required or implied: “On my honor I have neither given nor received unauthorized aid in doing this assignment.” If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999).

Students who are unclear about what constitutes academic dishonesty, academic misconduct, plagiarism, or other violations should consult UF resources such as the Academic Integrity Training Module (<https://sccr.dso.ufl.edu/quick-links/academic-integrity/>). You may also consult with your instructor or anyone in the Dean of Students Office (Peabody Hall).

**OTHER UF POLICIES AND RESOURCES**

University Policy on Accommodating Students with Disabilities

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

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/>.

Counseling/Health Services

Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with the instructor and to seek professional assistance. Resources are available on-campus and off-campus for students having personal, academic, or career problems. Resources include:

* Counseling & Wellness Center, 392-1575, personal and career counseling, <http://www.counsel.ufl.edu/>
* Student Mental Health Services, 392-1171, <http://www.health.ufl.edu/shcc/smhs/index.htm#urgent>
* Student Health Care Center, 392-1161, personal and counseling
* Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161 x4321
* Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling
* Alachua County Crisis Center, 352-264-6789 (available 24/7)

Computer Policy

In keeping with the University of Florida’s student computer policy all assignments completed for this class must be typed using a word processing program. Use of spell-checking and grammar-checking programs is strongly encouraged. Points will be deducted from assignment with excessive spelling/grammar errors. Use of desktop publishing software and computer generated graphics for course product that may eventually be included in student’s portfolios is also strongly encouraged.

Software Use

All faculty, staff, and students of the University of Florida are required and expected to obey 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.

Acceptable Use Policy

Please read the University of Florida Acceptable Use Policy: <https://it.ufl.edu/policies/acceptable-use/acceptable-use-policy/>. You are expected to abide by this policy.

**AI Use Policy**

**Purpose:**  
This course encourages the exploration and integration of emerging technologies, including artificial intelligence (AI), to enhance learning and professional development. The use of AI tools, such as ChatGPT, Grammarly, and other generative technologies, can be valuable resources for drafting, brainstorming, and refining ideas.

**Guidelines:**

1. **Transparency:**  
   If you use AI tools in your work, you must clearly indicate how and where you have utilized them. For example, you might add a note at the end of an assignment that states, "This document was reviewed using Grammarly" or "ChatGPT was used to generate initial ideas for this assignment."
2. **Originality:**  
   While AI tools can assist in the creative process, all submissions must be your own original work. AI should not replace your critical thinking, problem-solving, or the creative process. Plagiarism, including submitting AI-generated content as your own, will not be tolerated.
3. **Attribution:**  
   If AI tools are used to generate specific content (e.g., text, code, design), proper attribution must be provided. This could be as simple as a footnote or a brief mention in your submission. Failure to provide attribution may be considered a breach of academic integrity.
4. **Academic Integrity:**  
   Misuse of AI tools to complete assignments in a way that violates the course's learning objectives or academic honesty policies will be treated as academic misconduct. This includes using AI to generate entire assignments, plagiarize others' work, or bypass critical learning tasks.
5. **Ethical Considerations:**  
   Students are encouraged to critically evaluate the ethical implications of AI use, including bias, fairness, and the potential for misuse. Discussions around AI ethics will be integrated into course content to foster responsible and informed use.

**Support:**  
If you're unsure about how to appropriately use AI tools for a specific assignment, please consult with the instructor. I am here to help you navigate the ethical and effective use of AI in your academic work.