This course is aimed to give the students of the Construction Management (CM) department a more in depth knowledge on topics covered in the online OSHA-30 hour safety course. The online focuses on a wider range of topics that are covered in the OSHA-10 hour course that students are required to complete in CM 413: Jobsite Management, such as hazard communication, OSHA inspection procedures, industrial hygiene & bloodborne pathogens, and much more. The course will also include topics outside the scope of the 30-hour class such as: heavy equipment inspections, rigging safety and techniques, challenges of working in the marine environment, and spill kits/ hazardous materials cleanup. Laboratory activities will be implemented into the course for student to get a hands on learning experience, and be exposed to some of the situations they will see in their careers. This course will give Cal Poly CM students an advantage over other universities students because they will head into the workforce with higher certifications and a wider knowledge of personal and worker safety.

Introduction:
Construction workers learn from day one that safety is of the utmost importance. Cal Poly’s Construction Management program teaches safety as a priority, but lacks in teaching mitigation strategies. As a student of the Construction Management Department, I thought that there needed to be a heavier emphasis on jobsite safety while applying Cal Poly’s “Learn by Doing” motto. Cal Poly prides itself on giving students hands on experience, however, during my summer internships working in demolition, I noticed that my education has taught me a lot about the office operations but was lacking education about onsite safety and the related hands on experience. Some of the biggest challenges I faced during my work experience was understanding different rigging techniques and how they can be applied, the proper use of life saving equipment, and operation and daily safety inspections of heavy equipment. For these reasons, I thought an interactive OSHA-30 laboratory course would be of great benefit to the students of the CM program. This course will prepare students for real world situations that they otherwise wouldn't otherwise be exposed to in the classroom.

Steps:
An important part of developing a curriculum for this class was understanding what topics were covered in the OSHA-30 hour online course. So after I found what was going to be covered in the course, the next step was to narrow down what I thought to be 7-10 of the more significant topics and develop an in class laboratory demonstration that related to those topics. One thing I really wanted to avoid was just reiterating what was being taught in the online class through a powerpoint lecture and focus on actually getting students out of the classroom to physically see and do the activities that they are learning about. However, I think that some of the activities covered in the online course will need some further explanations so I decided to add in some lectures that would complement the online modules and help lead the class into the labs.

After the course curriculum was created and I thought it was thorough, I moved onto creating the syllabus. Creating the curriculum first really helped me when developing the syllabus because it made choosing Program Learning Outcomes (PLO) and Student Learning Outcomes (SLO). I decided to really structure the course around the OSHA 30 online modules so as far as grading, students submitting their OSHA 30 certificate at the end of the quarter will make up a significant portion of their final grade. I found the challenge structuring the grading like this was that students may not stay up to date with their online work, which could be problematic because the in class activities work in unison with the online course. To counteract this, I decided to have checkpoint days where students will need to bring in a passing online score for certain topics to make sure that they are staying on top of the online course work that is essential for an efficient use of class time.

Deliverables:
When my project is completely complete, I will have produced an interactive course that is ready to implement into the Cal Poly Construction Management curriculum. I will have completed:

- A syllabus breaking down the course objectives
- A schedule that works alongside the OSHA-30 online course
- Developed laboratory activities and in class activities
- Weekly homework assignments that will apply the information students are learning in class and online to a real world situation.

Lessons Learned:
This project had a lot of unanticipated challenges along the road. After researching topics that were covered in the OSHA online course, I wanted to make sure that the laboratory exercises were comprehensive to where students considering different areas of construction would still benefit. While developing the activities in the labs and in class exercises I had to think about what was actually feasible financially and practically. For example, I knew that a rigging lab would benefit students taking the course, but it isn’t realistic to develop a lab around an actual crane because that is too hard and expensive to get to campus for students to have access to it.
Because of some of these feasibility issues, it forced me to scale down and simplify some of the labs, but I think that the alternatives I came up with will still be an effective learning experience.

Appendix – Syllabus & Schedule

California Polytechnic State University, San Luis Obispo

Construction Management Department

Course Number, Course Title, Quarter and Year

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Matt Bramlett, Patrick Garcia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email:</td>
<td><a href="mailto:Mbramlet@calpoly.edu">Mbramlet@calpoly.edu</a>, <a href="mailto:Pgarcia@calpoly.edu">Pgarcia@calpoly.edu</a></td>
</tr>
<tr>
<td>Office Hours:</td>
<td>TR 11am-12pm</td>
</tr>
<tr>
<td>Class Days/Times:</td>
<td>MW 10am-12pm</td>
</tr>
<tr>
<td>Classroom:</td>
<td>186-B304</td>
</tr>
<tr>
<td>Prerequisite(s):</td>
<td>CM 413- Jobsite Management</td>
</tr>
</tbody>
</table>

Course Description

This OSHA 30 Hour Construction Safety course provides a variety of training to students that will have some safety responsibility, typically foremen or supervisors. This training provides greater depth on an expanded list of topics associated with workplace hazards for construction safety and health hazards, which a worker may encounter at a construction site, as opposed to the 10 Hour OSHA Construction Safety course that is for workers without supervisory responsibility. The training emphasizes hazard identification, avoidance, control and prevention. Through this training, we want to ensure that employees are more knowledgeable about workplace hazards and contribute to a safer workplace.

Course Goals and Learning Outcomes

Course Goals:

As a result of this course, you should be able to:

- To identify major hazards related to motor vehicles, mechanized equipment, marine operations, and daily jobsite activities and appropriate forms of mitigation.
- To perform thorough inspections of safety equipment to determine proper function.
- To identify ways to select appropriate PPE and life saving equipment.
- To recognize worker rights protected under OSHA.
- To recognize employer/supervisor responsibilities under OSHA.
Course Learning Outcomes (CLOs):

1. Complete and receive a certificate for the online OSHA 30-hour safety-training course.
2. Comprehend and practice developing safety plans, JHA’s, SWPPP’s.
3. Demonstrate the ability to be able to identify PPE and life saving equipment and understand the proper use.
4. Demonstrate an understanding of OSHA rules and regulations.
5. Understand the responsibilities that companies have regarding worker safety.
6. Understand the rights that workers have under OSHA.
7. Sufficiently understand the roles of Project Managers, Superintendents, Foreman, Safety Managers, and Journeymen on a jobsite.
8. Be able to recognize hazards that arise due to marine environments.
9. Be able to recognize situations that require injury reports to management.
10. Understand the role of workers compensation insurance.

Student and Program Learning Outcomes

The American Council for Construction Education (ACCE) is the accrediting body for Cal Poly’s construction management program. The ACCE requires achievement of 20 student learning outcomes (SLOs). The construction management program has identified 20 program learning outcomes (PLOs) that equal or exceed the ACCE SLOs and 5 additional idiosyncratic PLOs. This course supports the following PLOs:

PLO 2: Create oral/ visual presentations appropriate to the construction discipline for a diverse audience.

PLO 3: Apply communication skills to function effectively in a diverse team.

PLO 4: Apply ethical principles appropriate to the profession to make informed and principled choices.

PLO 5: Understand construction methods, materials, and equipment used to construct a structure.

PLO 6: Analyze professional decisions based on ethical principles.

PLO 7: Create a construction project safety plan.

PLO 11: Analyze the scope of sub-contracted work.

PLO 23: Evaluate a construction project to assure a safe working environment.

PLO 28: Create a job-specific site utilization plan for all equipment, offices, site access, etc.

PLO 31: Apply appropriate technology to a variety of construction related issues.

Topical Outline, Outcomes, and Method of Assessment

This course has embedded assessment instruments for the PLO(s) listed below:

PLO 2: Create oral/ visual presentations appropriate to the construction discipline for a diverse audience.

PLO 7: Create a construction project safety plan.

PLO 23: Evaluate a construction project to assure a safe working environment.
PLO 28: Create a job-specific site utilization plan for all equipment, offices, site access, etc.

An overview of content, course learning outcomes, program learning outcomes, instructional activities, and assessment measures, is listed in the table below.

<table>
<thead>
<tr>
<th>Week #</th>
<th>Topical Outline</th>
<th>CLOs</th>
<th>PLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>JHA/ Site Safety Plan Development</td>
<td>2,5,8,9</td>
<td>2,7,28</td>
</tr>
<tr>
<td>3</td>
<td>Scaffolding Setup</td>
<td>3,4</td>
<td>3,5,23</td>
</tr>
<tr>
<td>8</td>
<td>Rigging/ Picking</td>
<td>3,4,8</td>
<td>3,5,23,31</td>
</tr>
<tr>
<td>9</td>
<td>PPE/ Life Saving Equipment</td>
<td>3,4,8,9</td>
<td>3,4,5,23,31</td>
</tr>
<tr>
<td>1-11</td>
<td>OSHA-30 Certification</td>
<td>1-10</td>
<td>All Supported PLOs</td>
</tr>
</tbody>
</table>

Required Texts/Reading

Textbook

Other Equipment/Material Requirements
Laptop with access to MS Office, Notebook

Classroom Protocol

As a student, you are responsible to:
- Stay up to date with your OSHA 30 online exercises. There may be some time in class to work on modules, but otherwise it is up to you to complete required modules for class discussions/ assignments/ quizzes.
- This class will be taught in a professional manner, so you will be expected to act as such. The purpose of this course is to prepare you for the fast moving pace of the construction industry and understand construction jobsite hazards. Therefore, think of your classmates as your coworkers and act accordingly.
- Understand basic construction processes related to daily jobsite activities. This is crucial to fully comprehend certain safety situations that will be discussed in the course.

OSHA-30 Online Course:
It is your responsibility to complete all the required modules by the end of the quarter. To receive full points for the online course, you will submit your certificate of completion to me during finals week as proof of completion. It is to your benefit to understand the concepts explained in the modules because these are the types of things you will be exposed to in the industry once you graduate.

Classroom Civility:
- This class is for the benefit of all students; so do not come to class to be a distraction to other students.
- Please stay off of your cell phones during lecture to avoid any other distractions.
- Arrive on time to class. Cal Poly begins class 10 min after the hour so please avoid arriving late and disrupting the lecture.
- If you cannot make it to class, send me an email so I can give you any assignments you will miss for the day.
- Assignments will be submitted through PolyLearn so please have your assignments submitted on time to avoid any missed points.

Assignments and Exams

The following assignments and their associated point values are subject to change by the instructor as needed.

<table>
<thead>
<tr>
<th>Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA 30 hour Online Training</td>
<td>200</td>
</tr>
<tr>
<td>Homework Assignments (8@ 10pts)</td>
<td>80</td>
</tr>
<tr>
<td>Midterm</td>
<td>120</td>
</tr>
<tr>
<td>Labs/ In-Class Exercises (5@ 20pts)</td>
<td>100</td>
</tr>
<tr>
<td>Group Presentation</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Points Possible</strong></td>
<td><strong>600</strong></td>
</tr>
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</table>

Late/Missed Work and Make-Up Policy

Late Assignments: Assignments will be accepted up to one (1) week past the due date for ½ credit. Anything submitted past the 1 week will not be accepted.

Make-Up Assignments: If for some reason you missed a class day, make sure to email me before hand to receive the make up work that needs to be completed. You will still be held responsible to turn make up work in on time.

Grading Policy

Listed below is the grading scale for this course.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Performance</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93 – 100%</td>
<td>Excellent Work</td>
<td>Superior Attainment of Course</td>
</tr>
<tr>
<td>A-</td>
<td>90 – 92%</td>
<td>Mostly Excellent Work</td>
<td>Learning Outcomes</td>
</tr>
<tr>
<td>Letter Grade</td>
<td>Percentage</td>
<td>Performance</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------</td>
<td>------------</td>
<td>-------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>B+</td>
<td>87 – 89%</td>
<td>Very Good Work</td>
<td>Good Attainment of Course Learning Outcomes</td>
</tr>
<tr>
<td>B</td>
<td>83 – 86%</td>
<td>Good Work</td>
<td></td>
</tr>
<tr>
<td>B-</td>
<td>80 – 82%</td>
<td>Mostly Good Work</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>77 – 79%</td>
<td>Very Acceptable Work</td>
<td>Acceptable Attainment of Course Learning Outcomes</td>
</tr>
<tr>
<td>C</td>
<td>73 – 76%</td>
<td>Acceptable Work</td>
<td></td>
</tr>
<tr>
<td>C-</td>
<td>70 – 72%</td>
<td>Mostly Acceptable Work</td>
<td>Poor Attainment of Course Learning Outcomes</td>
</tr>
<tr>
<td>D+</td>
<td>67 – 69%</td>
<td>Mostly Poor Work</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>63 – 66%</td>
<td>Poor Work</td>
<td></td>
</tr>
<tr>
<td>D-</td>
<td>60 – 62%</td>
<td>Very Poor Work</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0 – 59%</td>
<td>Failing Work</td>
<td>Non-Attainment of Course Learning Outcomes</td>
</tr>
</tbody>
</table>

**University Policies**

**Participation and Attendance**

Insert student participation and attendance expectations here. Students are responsible for knowing the University policy regarding class attendance. See this link on [Class Attendance Policy](#) provided on the university website.

**Add/Drop Policy**

Students are responsible for knowing the University policies, procedures, and schedule for dropping or adding classes. See this link on [Add/Drop Policy](#) provided on the university website.

**Academic Integrity**

Students are responsible for knowing the [Academic Honesty Policy](#).

**Students with Disabilities**

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Disability Resource Center, Building 124, Room 119, at (805) 756-1395, as early as possible in the term, as accommodations may take several weeks to arrange. If you are a student with a disability, please consider discussing your needs and possible accommodations with me as soon as possible, and visit the [DRC Website](#) for additional information.

**SensusAccess**

SensusAccess is a self-service, alternate media solution made available by Kennedy Library to automatically convert files into a range of alternate media including audio books (MP3 and DAISY), e-books (EPUB, EPUB3 and Mobi) and digital Braille. The service can also be used to convert inaccessible files such as image-only PDF files, JPG pictures and Microsoft PowerPoint presentations into more accessible and less tricky formats. This service is available at no
charge for all Cal Poly students, faculty, staff and alumni. For additional information, visit SensusAccess at the Kennedy Library.

Technical Support and Contact Information

Support is available for troubleshooting and access issues for PolyLearn. Please visit the PolyLearn Student Support Web Site for further information.

Campus Resources to Support Student Learning

Cal Poly offers programs and resources that are available to assist students during your academic studies, such as the Cal Poly Student Academic Services Web Site

Lab Structure

1. Rigging
   a. Have different rigging situations ready for picks
   b. Students will learn:
      i. When to use chains vs. slings
      ii. Effective ways to use slings
         1. Vertical
         2. Chokers
         4. Color Coding (Weight/ Foot application)
      iii. Effective ways to use chains:
         1. Single leg
         2. Double leg
         3. Triple leg
         4. Quad leg
   iv. Fasteners
      1. Horseshoe
      2. Carabineer
      3. Eyeholes, Etc.

2. PPE/ Life saving equipment
   a. Demonstrations of Yoyo’s / Harnesses
      i. Effective anchor points
   b. Chemical resistivity & Abrasiveness of certain PPE
      i. Gloves
      ii. Coveralls
      iii. ...

3. Equipment Safety Inspections
   a. Field trip to equipment rental facility
      i. Demonstration of checking hydraulic oils
      ii. Checking for cracks in attachments
      iii. Checking pins and retainers

4. JHA/ Site Safety Plans
   a. Have students visit a site and develop a JHA & Site safety plan for the hazards on site that day
b. Practice filling out a dailies

5. Scaffold Setup/Inspection
   a. Have students set up a single story scaffold
      i. Inspect members for integrity
      ii. Inspect bolts/nuts
      iii. Inspect laps on walkways & integrity of walkway