Construction Communication – A New Technical Elective Course at Cal Poly

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A new course, Construction Communication, was developed to be included in course offerings at California Polytechnic University San Luis Obispo (Cal Poly) as a technical elective for Construction Management (CM) undergraduate students. The goal of this course is to prepare Junior and Senior level students for real life scenarios they will face in the industry upon graduation and to develop their soft skills. Effective communication is a skillset that is learned through years of experience. However, in this course that process will be jumpstarted, aiming to build a strong foundation of soft skills. Construction is a people business, and one’s day-to-day interactions vary. For that reason, this course is divided into five different modules: Knowing your Audience, Team Communication, Dispute Resolution, Negotiation Skills, and Advocacy for Project Needs. Half of the course consists of typical lecture material, while the other half consists of scenarios in which students role play. The course has been designed to be delivered in a conversational format and requires an instructor that has a conversational teaching style. At the time of this writing, this course has not been taught yet, but it is complete and is eligible to be a course offered at Cal Poly.

Key Words: Construction Communication, Soft Skills, Team Dynamics, Leadership, Conflict Management

Introduction - How the Project Came about

Cal Poly’s Construction Management Department is well known for producing quality graduates who are, for the most part, well rounded entrants to the industry. The majority of major and support courses focus on technical skills and critical thinking. There are a handful of support courses that do cover softs skills, but they do not directly apply to construction or cover every-day encounters in the industry. One of the most influential classes at Cal Poly was a Construction Management technical elective focusing on Project Management. The course curriculum covered technicalities in Project Management but did not cover the soft skills that are needed to apply this technical knowledge effectively. This gap was bridged through a conversational teaching style and by using examples drawn from the instructor’s experience in the industry. This subject matter and teaching style was different from other courses but was educationally effective. Drawing inspiration from that previous
course, the author sought to help bridge the soft skills gap for all Construction Management students, by working with this instructor to create this new course.

**Project Steps**

It was necessary to first confirm that a course covering soft skills in construction was sought after by students and industry members. For this reason, structured interviews with the Cal Poly Construction Management Advisory Council (CMAC) curriculum committee members and with select student leaders were conducted.

**CMAC Interviews**

Select CMAC members were interviewed because they had the best firsthand experience on how recent CM graduates perform in the industry and knew their strengths and weaknesses. This group also was responsible for oversight of the department’s curriculum and was familiar with it enough to validate that it lacks soft skill training. Below are the structured survey questions asked of each CMAC participant.

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<tr>
<th>#</th>
<th>Question</th>
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<tbody>
<tr>
<td>1</td>
<td>What soft skills do you feel Cal Poly Graduates are still lacking upon entering the industry?</td>
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<tr>
<td>2</td>
<td>What additional resources do you have to provide for these graduates to strengthen their soft skills? (i.e., knowing your audience, dispute resolution, negotiation skills, advocacy for project needs, team communication)</td>
</tr>
<tr>
<td>3</td>
<td>What are some areas of improvement that you would like to see for the CM curriculum in the future?</td>
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<tr>
<td>4</td>
<td>What situations/ conflicts have recent graduates found themselves in, where they would have benefitted from more effective communication skills? What scenarios have you observed that would make for a good mock scenario in the classroom?</td>
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<tr>
<td>5</td>
<td>Do you have any additional input/feedback for this future course?</td>
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The responses received from the structured interviews conducted with five interviewees varied. All respondents thought that a course focusing on soft skills in construction would be extremely beneficial and offered input on specific items that should be covered. Additional resources for teaching these skills post-graduation was needed at every company. These responses validated that this course was needed and showed that a course giving foundational soft skill knowledge will provide employers with more well-rounded candidates.
**Student Leader Interviews**

Interviews were conducted with five Junior and Senior level CM student leaders. For the purpose of this project, the student leaders selected were those involved in club and extracurricular leadership who have wide exposure to all CM students. The interviews questioned what they felt they had not learned enough about in the curriculum, and what skills they want to advance before going into the industry.

Table 2

<table>
<thead>
<tr>
<th>#</th>
<th>Question</th>
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<tbody>
<tr>
<td>1</td>
<td>Before graduating from the CM program, what soft skills do you wish you had learned more about?</td>
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<tr>
<td>2</td>
<td>Have you ever been in any classes that have reinforced your soft skills? If so, how beneficial were they?</td>
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<td>3</td>
<td>How confident are you in your ability to be successful in the following categories upon graduation? Knowing your audience (i.e., taking to a foreman vs project executive) Dispute resolution Negotiation skills Advocacy for project needs Team communication</td>
</tr>
<tr>
<td>4</td>
<td>Being a student leader, how confident are you in your peers’ abilities for the same categories? Knowing your audience (i.e., taking to a foreman vs project executive) Dispute resolution Negotiation skills Advocacy for project needs Team communication</td>
</tr>
<tr>
<td>5</td>
<td>What other areas within effective construction communication do you feel need more emphasis in the CM curriculum? How would these benefit all other students?</td>
</tr>
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</table>

Not all responses were applicable to the course, which was created, but they did help form modules that were engaging and useful for students. Students that gave the most detailed answers were followed up with to see if they would like to expand on any of their answers. Using this combination of interviews provided the most wholistic feel for what the state of these topics were in the CM community. The responses recorded from interviews with student leaders further validated that this course was a necessity.

**Course Pre-Programming and Research**

After the interviews were conducted, the pre-programming for the course was underway. Interview responses were reviewed and a plan for this course was developed. A five-module course format was
adopted consisting of the following areas: knowing your audience, team communication, dispute
resolution, negotiation skills, and advocacy for project needs. Various academic studies on
communication in construction were sought out as sources for the course. These were originally
intended to be the only sources for this course but were later rejected in favor of textbooks. Several
textbooks on team dynamics and technical communication were selected since they covered the
course goals better and were accessible to all students. The final part of pre-programming was
recruiting an instructor to help guide the construction of the course and eventually to teach it. The
same instructor from the Project Management course at Cal Poly was selected to help create this one.
Over the course of several months, the course was built in collaboration with the professor.

Course Objectives

The goal of this course is to prepare Junior and Senior level students for real life scenarios they will
face in the industry upon graduation and to develop their soft skills. Effective communication is a
skillset that is learned through years of experience. However, in this course, the learning process will
be jumpstarted to build a foundation of soft skills. Construction is a people business, and one’s day-
to-day interactions will vary, which is why this course has four separate learning outcomes.

Learning Outcomes (CLOs):

1. Learn to effectively analyze and know your audience.
2. Recognize what creates an effective and diverse team.
3. Learn how to approach different disputes and how to come out on top of them.
4. Learn the basics of personal and workplace negotiation.

Project Deliverables

This course is two quarter credit-hours and includes five completed modules that will be taught over a
10-week quarter. Designated as an “activity” course, the class schedule includes two 2-hour class
sessions per week. Each week has one lecture day and one scenario day. The scenarios days will be
fueled by students’ introduction assignments that will be touched upon later in this paper. With this
project complete, the following deliverables are available for prospective instructors:

- A course syllabus that highlights course objectives and program learning outcomes
- Eight complete lectures in PDF form
- Five module introduction assignment prompts
- One supplemental assignment prompt
- One final presentation prompt
- A grading rubric for scenario role-playing
• A built-out course in Canvas (a course management software tool)

**Module #1: Knowing Your Audience**

Module One will be taught over the course of two weeks. The timing for this module includes two class periods for course and instructor introductions. This course varies from most others in the CM curriculum because it includes a roleplaying element which will require extra time to get students accustomed. The key points of this module include:

• Understanding the importance of understanding your audience’s perspective
• Identifying internal and external customers
• Organizational hierarchy
• Demographics
• Medium of communication

As with all the other modules, an introduction assignment is required to be turned in by students prior to the first lecture in class. The purpose of these introduction assignments is to get students thinking about the upcoming course module before it starts so they will bring questions and input to the class conversation. The last question of the introduction assignment asks students for two scenario suggestions to role play in class that are related to the module. Throughout the duration of the course, every student will have at least one of their suggested scenarios selected that they will have to expand upon and deliver a presentation on it in class. The presentations are to be left open ended so students can roleplay out the rest of the scenario in class. All students will be graded based on the rubric below (Figure 1). At the end of this module, there is a graded quiz reviewing these concepts.

*Figure 1. Scenario Rubric*
Module #2: Team Communication

Module Two will be taught over the course of two weeks, consisting of two lecture periods and two scenario days. This module focuses on what makes up a successful team and how to balance different personalities. Understanding this concept will help students learn to create well rounded teams and later lead them successfully. Company culture plays a large role in keeping teams motivated and feeling that their needs are met which is why it is also covered in this module. The key points of this module include:

- DISC personality test
- Creating a successful team
- Leading a team
- Keeping a team successful
- Understanding strong company culture

Prior to the module starting, students are required to submit an introduction assignment. Along with the introduction assignment for this module students are required to complete a DISC personality test and submit the results. This test will be covered in lecture and tied to understanding dynamics within teams. Both scenario days for the module are graded based on the rubric in Figure 1. Students are also required to complete a graded review quiz at the end of this module.

Module #3: Dispute Resolution

Module Three will be taught over the course of two weeks, consisting of two lecture periods and two scenario days. Disputes are encountered throughout everyday life, yet for new graduates, disputes in the workplace are extra important. While there isn’t a catch all solution to resolving all disputes, this module walks students through a best practice way of approaching disputes. This, accompanied with scenarios of dispute resolution in practice, help give some real-world experience to students. The key points of this module include:

- Documentation
- Understanding the opposition
- Phases of Conflict
- Collaboration
- Understanding ‘The Big Picture’

Prior to the module starting, students are required to submit an introduction assignment. Both scenario days for the module are graded based on the rubric in Figure 1. Students are also required to complete a graded review quiz at the end of this module.
Module #4: Negotiation Skills

Module Four will be taught over the course of two weeks, consisting of two lecture periods and two scenario days. This module is split up into two main areas: workplace negotiations and personal negotiations. Inclusion of material on personal negotiations is geared to help bridge the gap of soft skills that do not get taught in regular coursework. While there are many personal negotiations that one goes through, that part of this module spends the most time on job offers, promotions, and marketing yourself. The key points of this module include:

- Types of bargaining
- Understanding of various workplace negotiations
- Understanding of several personal negotiations
- Marketing yourself
- How to approach difficult conversations

Prior to the module starting, students are required to submit an introduction assignment. Both scenario days for the module are graded based on the rubric in Figure 1. Students are also required to complete a graded review quiz at the end of this module.

Module #5: Advocacy for Project Needs

Module Five will be taught over the course of two weeks, consisting of one lecture period, one guest speaker panel day, and two scenario days. Ideally, during the time slot allotted for a second lecture, a guest panel will be held. This panel includes multiple stakeholders from the same real life project including owners/owner’s rep, the general contractor, members of the design team, and subcontractors. This panel will be sourced from faculty connections in the area and will be asked to prepare a brief presentation on the teamwork that was involved in successfully completing the project. It will then be opened for questions from the class about how each party advocated with one another to overcome issues. The key points of this module include:

- Understanding of the basics of advocacy
- Advocating with owners
- Advocating with architects
- Advocating with engineers
- Advocating with subcontractors

Prior to the module starting, students are required to submit an introduction assignment. Both scenario days for the module are graded based on the rubric in Figure 1. Students are also required to complete a graded review quiz at the end of this module.
Conclusion

Throughout the five modules of this course, students will have built a foundation of soft skills required for success in the construction industry. Students will have been introduced to the essential elements associated with soft skills in construction, to include knowing your audience, team communication, dispute resolution, negotiation skills, and advocacy for project needs. At the Junior and Senior level, most students have had internship experiences in the industry and will have encountered some communication-oriented scenarios. This existing knowledge is used in this course to provide other students with realistic scenarios to role play. With soft skills, one of the only ways to improve is through industry experience that is often not an option while one is a full-time student. The scenarios that are presented and role played in class will provide supplemental experience throughout the course. It’s not possible for a course to be a catch-all for every difficult communication related encounter, but this course may be successful in establishing best practices to approach the most common communication related issues. As a technical elective, this course is subject to minor changes based on new norms in the industry, different teaching styles, and evolving college and department requirements. All resources for the course are hyperlinked and available in the Appendix at the end of this document.
Appendix – Course Resources

Module #1 – Knowing your Audience

Lectures:
- Syllabus
- Knowing your Audience Lecture 1

Assignments:
- Module #1 – Introduction Assignment
- Scenario Presentation Assignment
- Module #1 Quiz

Module #2 – Team Communication

Lectures:
- Team Communication Lecture 1
- Team Communication Lecture 2

Assignments:
- Module #2 – Introduction Assignment
- Module #2 – DISC Personality Test
- Module #2 Quiz

Module #3 – Dispute Resolution

Lectures:
- Dispute Resolution Lecture 1
- Dispute Resolution Lecture 2

Assignments:
- Module #3 – Introduction Assignment
- Module #3 Quiz

Module #4 – Negotiation Skills

Lectures:
- Negotiation Skills Lecture 1
• Negotiation Skills Lecture 2

Assignments:
• Module #4 – Introduction Assignment
• Module #4 Quiz

Module #5 – Advocacy for Project Needs

Lectures:
• Advocacy for Project Needs Lecture #1

Assignments:
• Module #5 – Introduction Assignment
• Module #5 Quiz

Supplemental Resources

Course Texts
• Group Dynamics for Teams, 5th Edition – Daniel Levi
• Organizational Communication, 7th Edition – Katherine Miller

Academic Studies
• Assessing the Effect of Project Based Learning on Leadership Abilities and Communication Skills – Russel Walters & Todd Sirotiak
• Improving Communication Skills of Construction Students by Linking English Courses in an Integrated First-Year Curriculum – Kelly Strong
• Student Perception of a Hybrid Learning Environment for a Lab-Based Construction Management Course – Borinara Park

Interviews
• Structured Interview Questions
• Structured Interview Responses