

Title:  
A Student Centered, Active Learning Approach to the Delivery of a  
Visiting Professional Lecture Series

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Abstract:

The visiting lecturer, and the passive learning that this model evokes, has been a cornerstone of academic and scholarly pursuits for centuries. Utilizing a structured active learning approach to the planning and execution of a traditional weekly lecture series, students took full ownership of each week's lecture. Faculty involvement shifted from active planner and host to merely keeping a list of lecture details provided by students. This shifting of responsibility to the students changed the focus of the lecture series experience from a passive weekly event to a student-centered activity, the goal of which was to make their week of hosting successful.

At the conclusion of the lecture series, students were asked to complete a brief questionnaire regarding: 1) The lecture topics; 2) The key active learning tasks, and; 3) Their perceptions about how the topics and tasks related to both their civil engineering education and their careers in civil engineering. Trends in the data indicate that including an active learning component in a traditional passive lecture series adds value for students in two worthwhile ways. The first being an increased awareness of less traditional, yet critically important, professional communication skills and second, students develop a sense of self efficacy in a public facing aspect of professional life.

Overall the structured active learning approach to the planning and execution of a traditional weekly lecture series by the students was a success. The students found that both the planning/execution of their weekly lecture and attending the lectures offered by their peers to be a valuable experience.

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Background:

The Wentworth Capstone Experience consists of a two semester eight (8) credit multi-disciplinary project-based curriculum. The Wentworth Institute of Technology employs a cooperative education model that includes two required co-op experiences. One during the Spring semester of their Junior year and one during the Fall semester of their Senior year. To “make-up” for these two required co-ops during traditional Spring/Fall semesters, Juniors and Seniors attend classes full-time in the Summers of their Junior and Senior years and graduate in August at the conclusion of their Senior Summer. The two semesters of the capstone experience are scheduled during the Spring and Summer of the Senior year.

The course delivery includes a one hour lecture each week and two, three-hour lab sessions each week. Each component has a specific pedagogical approach as well as student outcomes as identified in Table 1.

Table 1. Generalized components of the Wentworth Capstone Experience.

First Semester (Spring Senior Year)		Second Semester (Summer Senior Year)	
Lecture	Lab	Lecture	Lab
1 Hour/Week	6 Hours/Week in Two-3 hours sessions	1 Hour/Week	6 Hours/Week in Two-3 hours sessions
Weekly lectures on key design project components and processes and “one-off” capstone deliverables on such topics as Value Engineering, Ethics and Sustainability.	Team Creation, Project Conceptualization, Scope of Services Development and Design Criteria/Constraint Identification.	Announcement and Reminders (5 minutes) Student Centered Guest Lecture Series	Team and individual sub-discipline design.
Goal: Provide Students with background theory and expectations for design project and “one-off” deliverables such as the Individual Value Engineering, Ethics and Sustainability Reports.	Goal: 25% Design and Presentation”	Goal: Student proffered guest lectures modeled on professional meeting/conference workflows and competencies.	Goal: Final design project document binder including calculations, plans, design process documentation, Team oral presentation and attendance at College poster session.

In the lab portion of their capstone experience the students complete a multi-disciplinary project in teams of 4-5 with the individuals assuming the lead role in one of the sub-disciplines of Civil Engineering (e.g. Environmental, Site-Civil, Geotechnical, Structural, Traffic, Highway and Geomatics). The student teams are mentored by a team of faculty representing the same disciplines as the student team members. In the first semester the lecture component of the course focuses on presenting information to the students to support the various phases of their project (e.g. Time Accounting, Scope of Services Development, Design Criteria, etc.) as well as lectures on other aspects of their Capstone Experience assessment such as stand-alone reports on project sustainability, ethical considerations and value engineering. Their grade in the course is partially based on the assessment of group components and partially on assessment of individual components. Though it is important for the reader to be aware of all the components in the Wentworth Capstone Experience, this paper focuses on the lecture component of the second semester.

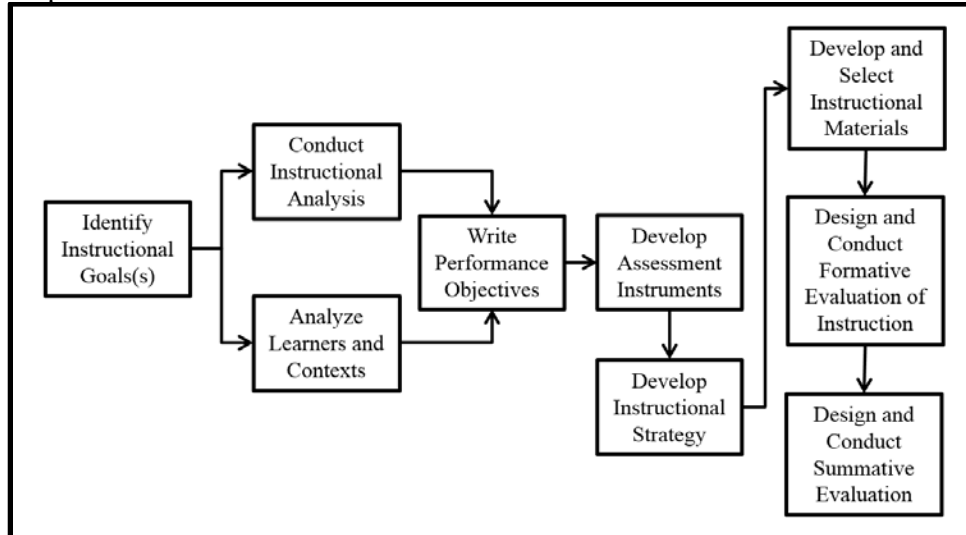
### Second Semester Lecture History:

Historically, the second semester of lecture has been used in many ways, such as bringing in guest speakers by faculty, covering topics that have since been moved to the first semester lecture, and communication of project instructions. Three years ago, the occasional faculty-generated guest lectures morphed into students inviting guests for all or some of the weeks.

### The 2018 Second Semester Lecture Overhaul:

In 2018 it was decided to formalize the second semester lecture into a singular focus on a student-centered lecture series modeled on the elements of professional conference/meeting planning. A rigorous instructional design model was employed in the development of the lecture series to insure key pedagogical elements were not overlooked. The instructional design model chosen was the *Dick & Carey* model as described their text on the subject entitled: *The Systematic Design of Instruction* (Dick, Carey & Carey 2015). This model was chosen both for its simplicity and its linear methodology, the authors having had success with it in the past when designing instruction for undergraduate engineering students. Figure 1 is a concept map that the authors developed which includes the key elements of the *Dick & Carey* model. Each element in the instructional design process will be discussed individually. Though it is critical that each step identified in the instructional design process be deliberately executed every situation varies. As a result, the emphasis and effort for each element can vary widely in a single instructional design. It is for this reason that as each step of the process is discussed herein, several pages are dedicated to some sections, while others require only a paragraph of attention.

Figure 1. Adaption of the Dick & Carey instructional design model developed by the authors and that provides the framework of the student-centered lecture series curriculum.



#### Identification of the Instructional Goals:

Whereas some faculty teach in both lecture and lab, while others are strictly involved with the lab, the identification of the goals was completed by the authors during the Spring of 2018 as they prepared to co-teach the lectures for the Summer of 2018.<sup>1</sup> Three main instructional goals were identified, and they are shown in Table 2. These were arrived at as part of the faculty reflection components of the Wentworth Civil Engineering<sup>2</sup> Department’s Continuous Quality Improvement efforts. Historically, students signed up for a week to host, and the faculty back filled the unused weeks with lecture content or a guest lecturer they sought out. However, by 2017 the number of groups had grown to eleven (11) and a virtual game of musical chairs developed when the late dates were grabbed first, and some groups found themselves trying to find a speaker with only a week or two advance time. In the end, the most organized and aware groups were successful, however some groups were deprived of the opportunity to host and some weeks slotted for speakers went unfilled. There were also some concerns about the variety in the quality of the students’ introductions and their communication with their guests. As the faculty began preparing for 2018 it was clear the organic morphing of the lecture series needed some structure.

The authors were also desirous of challenging the historical mental model of a lecture series as a passive experience, (Markman and Gentner 2001) (Eckert and Bell 2005). In assessing the various educational models best suited to employ, the authors settled on what is currently being styled as “active learning” which is defined as “an instructional method that engages students to do meaningful learning activities and think about what they are doing” (Prince 2004). Active

<sup>1</sup> Ultimately, Professor Anderson was not scheduled to teach the Capstone lecture in the Summer of 2018 after this instructional design process was started, however, as the senior capstone faculty responsible for coordinating the lab sections, he remained engaged in the lecture series each week.

<sup>2</sup> In the Fall of 2018 “and Technology” was dropped from the department name in recognition of the fact that the BS in Civil Engineering Technology program degree was no longer offered.

learning has its roots in constructivist educational theory that posits: "...learners actively construct their own knowledge and meaning from their experiences." (Doolittle). The Constructivist/Active Learning approach was chosen over Kolb's Experiential Learning model (Kolb 1984) because of the varied professional goals and work experiences of the students. Specifically, had the primary instructional goal been to connect the lecture series project to instructor provided theories/structures utilized in lecture series development, Kolb's model would have been a more appropriate choice. However, since a critical goal of the lecture series development is to provide a pathway for each student to construct their own individual meaning for participation in a professional lecture series in terms of their own developing professional goals and their co-op/workplace experiences to date, the constructivist/active model resonated more clearly with the authors.

Table 2. Three (3) instructional goals.

1	Utilize active-learning pedagogy in the lecture experience.
2	Student development of competencies applicable to professional life.
3	Assessment to be directly related to the student efforts in lecture series development.

#### Analyze Learners and Contexts:

The students enrolled in the Summer Capstone lecture (CIVE 5500) are a very homogenous cohort. With little exception, they are in their last semester of their BSCE degree and are slated to graduate in August, at the end of the Summer semester. Having already had two co-op experiences they are all, for the most part, focused on graduating and settling into employment in the field of Civil Engineering.

#### Conduct Instructional Analysis:

Each of the Table 2 Instructional Goals was analyzed to determine what steps would need to be taken by the students to accomplish each goal. These steps are identified in Tables 3 thru 5.

Table 3. Instructional goal 1:  
Utilize active-learning pedagogy in the lecture experience.

Students make all arrangements	Faculty involvement limited to monitoring progress and as a resource
Brainstorm as a team on prospective speakers	Instructor present
Make initial contact and confirm date and presentation title in writing	Document to instructor
Secure speaker bio and presentation description	Document to instructor
Make parking arrangements for speaker	Document to instructor
Confirm speaker's A/V needs	Document to instructor
Meet & greet and presentation day set-up	Instructor present
Introduce speaker	Instructor present
Send thank-you note	Document to instructor

Table 4. Instructional goal 2:  
Student development of competencies applicable to professional life.

<b>Professional Communication</b>
Contact speaker
Confirm speaker
Meet and greet
Perform introduction
Send thank-you note
<b>Planning Logistics</b>
Secure speaker
Secure presentation title
Secure speaker bio
Secure presentation description
Confirm A/V needs
Secure parking for speaker
Meet speaker on arrival to campus
Introduce Speaker to capstone team and faculty

Table 5. Instructional goal 3: Assessment to be directly related to the student efforts in lecture series development.

Accountability for Deadlines
Speaker Choice and Title Deadline
Speaker Bio and Presentation Description Deadline
Thank-you Note Deadline
Document Communications
Speaker Name
Presentation Title
Speaker Bio
Presentation Description
Thank you Note

Write Performance Objectives:

The process of arranging a speaker, such as one might employ for a professional meeting or conference, can be viewed as composed of two key components being planning and logistics. Though the process reciprocates between the two, the process is essentially temporally based and linear, though some redundancy is often built into the communication. Table 6 identifies the key tasks in order of completion as gleaned from the above Instructional Analysis.

Table 6. Key tasks to be utilized in crafting written performance objectives for students.

1	Identify Prospective Speaker(s);
2	Contact Speaker(s) and Confirm;
3	Identify preliminary material needs and any speaker requirements;
4	Make necessary logistical arrangements;
5	Hosting the speaking event;
6	Post engagement follow-up.

Based on the key tasks in Table 6, specific, measurable student performance objectives were articulated.

Table 7. Six (6) student performance objectives.

1	Conduct a brainstorming session as a team to identify and prioritize prospective lecture series speakers;
2	Contact a speaker(s) and communicate lecture series speaker expectations and confirm a speaker to fill an assigned date/time slot;
3	Communicate effectively with chosen speaker(s) regarding the preliminary materials needed and any speaker requirements they may have;
4	Make logistical arrangements to disseminate and publish presentation materials and meet speaker requirements;
5	Host and introduce a guest speaker in a collegial setting.
6	Follow-up with the speaker after the speaking engagement to thank them for their participation.

Develop Assessment Instruments:

The six (6) performance objectives were mapped to specific deliverables which could be assessed by faculty. Whereas the students in most instances were merely reporting to faculty their completion of tasks, it was not felt that faculty needed to review communications with prospective speakers before the communications were sent. The guiding instructional philosophy in the capstone experience is for the students to leverage competencies developed throughout their course of study and to showcase them in the performance of a cohesive complex set of professional engineering tasks. For example, it is assumed that the students can write a professional email to document a conversation and could craft a professional thank-you. The quality of the deliverables was not assessed other than to check off that they completed it, though there were some deductions in grading made for missed assessment deadlines. The deliverables are identified in Table 8.

Table 8. Deliverables required to assess each performance objective.

PO	Short-hand Title	Deliverables
1	Brainstorming Session	No deliverable, faculty met with each team to confirm they were not skipping this step
2	Speaker Confirmation	Confirmation email(s)
3	Preliminary materials and speaker requirements.	Confirmation email(s)
4	Make logistical arrangements	Follow up email(s)
5	Host and introduce Speaker.	Faculty observation (on day of presentation)
6	Post presentation follow-up.	Thank-you letter



A grading rubric was developed, in the form of an MS Excel spreadsheet so that as each time a deliverable was completed by a group, it could be checked off and the points awarded. A facsimile of the spreadsheet with the 2019 grades input is shown in Figure 2.

Figure 2 Facsimile grading rubric and spreadsheet used to record the completion of performance objectives.

Date	Speaker	Topic	Team Number	Student Lead	Speaker Confirmed On Time	Bio and Description On Time	Introduction	Team On Time	Thank You Letter On Time	Percent Grade
					1	1	1	1	0.5	90%
					1	1	1	1	1	100%
					0.5	1	1	1	1	85%
					1	1	1	1	1	100%
					1	1	1	1	1	100%
					1	1	1	1	1	100%
					1	1	1	1	1	100%
					1	1	1	1	1	100%
					1	1	1	1	1	100%
					1	1	1	1	1	100%
					1	1	1	1	0.8	96%
<b>Weighting in Lecture Series Grade Calculation:</b>					<b>30%</b>	<b>20%</b>	<b>20%</b>	<b>10%</b>	<b>20%</b>	

#### Develop Instructional Strategy:

By its nature as a capstone experience, the predominant pedagogy in use is characterized by the sharing of broad or general expectations and goals with the students rather than detail stepwise instructions. Likewise, the assessment method chosen was focused on demonstrations of completion not on documentation of procedures, simple goal-oriented instructions were determined to be best. The following four (4) guidelines were adhered to in preparing the student instructions. 1) Because the planning and orchestrating of this lecture series spanned two semesters it was determined that student expectations should be in writing. 2) Rather than give the students one handout for the entire lecture series, it was felt that it would be best to give them two handouts, one relative to the responsibilities for each semester. 3) Instructions would focus on outcomes (Performance Objectives) and would include little procedural detail. 4) Deadlines would be made very clear since this would mimic conference planning environments. Notwithstanding the above, it was felt that though the expectation that the students would be able to write a professional email and/or letter, it was highly likely that they had never actually invited someone to such a meeting. In response to this and to make sure the students were properly prepared for this outward facing experience, very specific detail about the logistics of a speaker’s campus visit would need to be provided to the students.

Faculty would also need to perform the role of the “conference organizer”. Early on it was understood by faculty that such an outward facing lecture series, if not carried off well, could negatively impact industry relations, alumni and advancement activities and future departmental recruitment for such things as the Industrial Advisory Committee, adjunct instructors and Co-op

positions. To respond to this, plans for supporting the students with reminders regarding key milestone dates would need to be developed.

Develop Instructional Materials:

Based on the above instructional strategy and the guidelines therein, two handouts were developed for the students. The first one was given to the students about 4 weeks before the end of the first semester of capstone. The second one was given out the first week of the second semester. Faculty handed out paper copies and briefly went over the highlights with the students each time. The full handouts are included in Appendix “A”. Table 9 and Table 10 describe the key elements of each handout.

Table 9. Key elements of guest speaker hosting handout (First semester).

Acceptable topics
Deadline for securing a speaker
Confirmation documentation requirements
Sample confirmation and logistics email
Assigned dates for each team

Table 10. Speaker series details (Second semester)

Speaker bio, description and A/V needs deadlines
Speaker parking reservation process and deadline
Proper attire
Introduction and conclusion requirements
Thank you note requirement and deadline

Design and Conduct Formative Evaluation of Instruction:

Drafts of the Instructional Materials (Handouts) were circulated to all capstone faculty with a solicitation for comments and suggestions. These were then reviewed by the authors who then made edits to the draft documents. This process continued iteratively until consensus was reached at which time the drafts were finalized. This was all done prior to the release of any documents to the students in order to minimize miscommunication and to provide assurance that the entire capstone faculty was working from the same script and advising students based on the same information.

Design and Conduct Summative Evaluation:

At the conclusion of the last guest lecture on August 1, 2018, a two- page questionnaire was given to the students soliciting their opinions and impressions of the lecture series. On the first page, students were presented with eight (8) statements and asked to rank their agreement with the statement using a five-point Likert scale, with a one (1) representing “completely disagree” and (5) representing “completely agree”. There was also an open response box provided for “Additional Comments”.

The statements were mapped directly to the first two Instructional Goals as described in Table 2 and are identified in Table 11.

Table 11. Questionnaire statements and their relationship to the instructional goals from Table 2.

#	Statement	Instructional Goal
1	I found this lecture series a worthwhile part of my civil engineering capstone experience.	Utilize active-learning pedagogy in the lecture experience.
2	I found the wide variety of topics of value.	Student development of competencies applicable to professional life.
3	I would have preferred the topics be directly related to civil engineering design.	Student development of competencies applicable to professional life.
4	Hosting an industry professional in my classroom is a worthwhile part of my civil engineering education.	Utilize active-learning pedagogy in the lecture experience.
5	This experience has made me better prepared to invite a guest speaker to a professional meeting.	Student development of competencies applicable to professional life.
6	Being able to host a guest speaker is an important part of being a Professional Engineer.	Student development of competencies applicable to professional life.
7	I felt the sending of a formal thank you letter, as opposed to an email, was important.	Utilize active-learning pedagogy in the lecture experience.
8	This experience will be important if I am asked to be a guest speaker in a college classroom in the future.	Student development of competencies applicable to professional life.

The second page contained a list of all the presentations and each student was asked to rank their top three favorite presentations and note their least favorite presentation.

#### Summative Evaluation Results:

Fifty-seven students were enrolled in capstone. Thirty-five questionnaires were returned (N= 35) which represents 61% of the enrolled students. Though certainly some students present may have opted not to volunteer to complete the questionnaire, the last lecture, when the questionnaire circulated was the day before 50% of the groups were scheduled to make their final presentations. Attendance was noticeably off, although lecture attendance is mandatory. The

eight (8) statements from the questionnaire are presented in Table 12 along with the means and standard deviations for each response.

Table 12. Questionnaire statements and summary of response data (N=35)

Questionnaire Statements		Mean ( $\bar{x}$ )	Standard Deviation ( $\sigma$ )
1	I found this lecture series a worthwhile part of my civil engineering capstone experience.	3.4	0.98
2	I found the wide variety of topics of value.	3.7	0.79
3	I would have preferred the topics be directly related to civil engineering design.	3.5	1.44
4	Hosting an industry professional in my classroom is a worthwhile part of my civil engineering education.	4.2	0.90
5	This experience has made me better prepared to invite a guest speaker to a professional meeting.	3.5	0.98
6	Being able to host a guest speaker is an important part of being a Professional Engineer.	3.8	0.75
7	I felt the sending of a formal thank you letter, as opposed to an email, was important.	3.9	0.98
8	This experience will be important if I am asked to be a guest speaker in a college classroom in the future.	3.9	0.96

Because the data gathered from page two of the questionnaire regarding topics could be easily connected to individual speakers and students, the specific topics from the lectures have been omitted and replaced with letters A-K and each of the presentations was merely characterized as to whether it was “Civil Design” or “Allied Field”. In order to rank the presentations, a weighted score for each student questionnaire was developed (N=33<sup>3</sup>). Points were assigned to each student’s rankings with a 3 being awarded for a first, 2 for a second, 1 for a third and a -1 for the “least favorite”. The points for each presentation were then summed. Table 13 contains the ranking of the presentations based on the weighted scores. It should be noted that the assignment of the A-K identifiers was done after the ranking. As a result, it in no way reflects the order of the presentations further assuring the requisite anonymity to speakers and students. The “Count” column in Table 13 indicates the number of students who ranked each of the presentations, whether it be a first, second, third or last.

<sup>3</sup> The N changes (35 to 33) from the first to the second page of the questionnaire because two respondents left the second page blank.

Table 13. Weighted ranking of presentations.

Presentation	Generalize Topic	Weighted Score	Count
A	Civil Design	45	20
B	Civil Design	38	18
C	Civil Design	25	14
D	Civil Design	23	15
E	Civil Design	13	6
F	Civil Design	13	8
G	Allied Field	6	14
H	Allied Field	5	9
I	Allied Field	0	12
J	Allied Field	-1	1
K	Allied Field	-1	13

Analysis of Summative Evaluation:

Analysis of the data in Table 12 provided some important feedback on the lecture series. It was noted that the averages for all questions were above the middle value of “3” with a majority close to “4”, indicating agreement. Also, with most of the standard deviations hovering around 1 consensus in the agreement seems a reasonable conclusion. It can also be noted that the statement with the highest mean ( $\bar{x} = 4.2$ ) response was “*Hosting an industry professional in my classroom is a worthwhile part of my civil engineering education*”. This question was designed to speak most directly to the Instructional Goal of: “*Student development of competencies applicable to professional life*”. Interestingly, it can be noted that the largest standard deviation ( $\sigma = 1.44$ ) relates to the statement: *I would have preferred the topics be directly related to civil engineering design*. Though there was “agreement” on this statement, the much larger standard deviation would seem to say that the agreement was not as universal as on the other statements.

The handout given to the students in the first semester includes a preamble that encourages students to find speakers in allied fields related to Civil Engineering, but they do not need to be design topics. The response to this may be indicative of a student preference for design speakers. The third observation of note from the first page of the questionnaire is the high averages for agreement (and low standard deviations) on the three statements that related to the active learning aspect of the lecture series (Statements 1, 4 & 7). If the students had not felt that the effort put into the lecture series had value, though they shared a perception that the benefit of the lecture series came from being passive consumers of lectures, the agreement averages for Statements 1, 4 & 7 would have been expected to be lower. One open response recorded in the “additional comment” box reads: “*I believe the professors should be the ones bringing guest speakers. After getting experience in the field over the years they should have more contacts*”. Had more students shared this sentiment, again, the agreement averages for statements 1, 4 & 7 would likely not have been as high as they were.

Table 13 also provides some noteworthy information about the topic preferences of the students. By weighting the rankings by individual respondents along with counting how many instances of

recognition each presentation received, a clear sense of preferences emerges. Specifically, if a presentation received a high weighted score and a high count this would be indicative of popularity. If, however a presentation had a low weighted score and a high count, it was clearly unpopular. If a presentation received a low weighted score and a low count, no significance could be attributed to the low score since it may be an outlier with limited statistical significance. Table 14 identifies these relationships. Table 15 includes the same information as Table 12 with an additional column for the appropriate Table 14 ascribed meaning.

Table 14. Meanings ascribed to the various permutations of the relationships between weighted score values and ranking counts.

Weighted Score	Ranking Count	Ascribed Meaning
High	High	Popular topic
Low	High	Unpopular topic
Low	Low	Insignificant
High	Low	Inconclusive
Medium	Medium	Inconclusive

Table 15. Table 12 data with Table 14 ascribed meanings appended hereto.

Presentation	Generalize Topic	Weighted Score	Count (n)	Ascribed Meaning
A	Civil Design	45	20	Popular Topic
B	Civil Design	38	18	Popular Topic
C	Civil Design	25	14	Popular Topic
D	Civil Design	23	15	Popular Topic
E	Civil Design	13	6	Inconclusive
F	Civil Design	13	8	Inconclusive
G	Allied Field	6	14	Inconclusive
H	Allied Field	5	9	Inconclusive
I	Allied Field	0	12	Unpopular Topic
J	Allied Field	-1	1	Insignificant
K	Allied Field	-1	13	Unpopular Topic

Though the students did not readily identify their preference for Civil Design topics when they responded to Table 12 Statement 3: *I would have preferred the topics be directly related to civil engineering design*, their rankings from Table 13 tell a different story. There is a clear preference for the Civil Design topics. It had been thought that the variety provided by encouraging allied professionals would have been a welcome diversion from the intensity of their capstone design experience. On the contrary, however, the popularity ranking data clearly shows a preference for the Civil Design topics.

Though no formal reliability testing was built into the questionnaire design, the mean response of 3.5 for Statement 3 from Table 12 and the unambiguous preference for Civil Design presentations identified in Table 13 rankings indicates a lack of internal consistency in the results of the instrument. Since there is also a higher standard deviation associated with Statement 3, indicating that the lower agreement was not universal, some acquiescence bias in the Likert scale data, is likely. Had the preference rankings noted in Table 13, been less stark, further analysis of internal consistency would have been warranted before concluding there was a preference for Civil Design topics.

#### Conclusions:

Based on the foregoing it was concluded that the Instructional Goals from Table 2 of: 1) Utilizing an active-learning pedagogy in the lecture series experience; 2) Student development of competencies applicable to professional life; and 3) Crafting an assessment directly related to the student efforts in lecture series development, were reached. Following a set of generalized written instructions, and supplemented with periodic reminders, students successfully completed all the planning and logistics tasks required to produce and present an eleven-week professional lecture series with faculty involvement limited to cataloging assessment milestones and providing occasional reminders and solicited advice. As with the initial implementation of any pedagogical models, there were identifiable instances where improvements in the communication of expectations, delivery of instruction and assessment can be changed in order to improve the overall experience for the students. With this premise in mind, there were five (5) specific recommendations for the 2019 lecture series based on the Summative Evaluation and other faculty Continuous Quality Improvement processes.

The first recommendation is to revise the introductory paragraph language of the first handout to include a reference to the fact that students particularly enjoyed design related presentations. Leaving the students an option to go outside of a strict Civil Design topic should be retained, however the relevancy of presentations from Allied Fields need to be well thought out and the speakers adequately vetted.

The second recommendation is to augment the first handout with a few sentences to frame the lecture series in terms of the professional value derived from successfully inviting and hosting a guest speaker. This information was explained to the students in both semesters (in class meetings when the two handouts were distributed) however, upon reflection it seemed that reinforcing the oral explanation with a brief written synopsis might aid in student understanding and improving the statement agreement scores for Statements 1, 4, 5, 6 & 8.

The third recommendation relates to how team members collaborated (or didn't) on this group responsibility. It was observed that some teams shared the work evenly, while in others one individual took care of the entire set of guest lecturer responsibilities. To provide some accountability and as a reminder to the teams that this aspect of their capstone experience is governed by the same rules relative to team work and shared responsibility as their design work and presentations, a few sentences articulating some basic expectations for task distribution will be added to the first handout.

The fourth recommendation relates to the securing of an external collaborator a task that was only alluded to above but includes some specific tasks that are nearly identical to those involved in securing a guest lecturer. In the past groups were permitted to have their external collaborator also serve as their guest lecturer. Going forward, this practice will be specifically disallowed and the student responsible for securing the guest lecturer will need to be a different student than secured the external collaborator. Combined with the third recommendation, this change will assure ample meaningful opportunities for student participation in securing and hosting professionals. The assessment instruments (spreadsheet/rubric) will be revised to include the timely securing of the external collaborator as a specific measured deliverable. Columns will also be added to grading spreadsheet/rubric to identify each individual student's task relative to the lecture series and for verifying the completion of it so full participation can be better assessed.

The fifth recommendation addresses a singular open response comment that indicated a desire to have had more time to secure the speaker. Since addressing this concern is quite easily accomplished, for 2019 the handout and initial presentation to students on the lecture series will be done 2 ½ weeks earlier than in 2018.

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Appendix A:  
Handouts Provided to Students Outlining Expectations

CIVE 5500 Guest Speaker Hosting  
For Summer 2018

Each group must secure a guest speaker for their (randomly) assigned week and host that speaker's presentation. The topic needs to be related to Civil Engineering and/or the built environment so there is a lot of flexibility. Though many past speakers have been Civil Engineers and presented about design issues, there have also been very well received presentations from other professions that often work closely with Civil Engineers. For example, a commercial banker or real estate attorney often make for very good speakers. Sometimes external collaborators make good speakers, though their time commitment to your project may make it so that taking additional time away from work difficult for them. If you are having difficulty finding a speaker, you may wish to contact Civil Department faculty members for suggestions, but it is up to you to contact the speaker and make all the arrangements. Also, if you wish help from a faculty member don't wait till the last minute!

***You must secure your speaker and provide documentation that you have done so (copies of email correspondence with the speaker) to Professor Vannozzi ([vannozzia@wit.edu](mailto:vannozzia@wit.edu)) on or before April 13, 2018.***

Though you may make the arrangements informally via a phone call or networking conversation, you are required to follow up with the speaker via snail or email. It is a professional courtesy to follow up such conversations with a note so that you can make sure there is no miscommunication and that they have the details in writing. A sample follow up is provided below:

*Mr/Ms. \*\*\*\*\*:*

*Thank you taking the time this morning to discuss with me visiting my Civil Engineering capstone class at Wentworth as a guest speaker on \*\*\*\*\* \*\*, 2018. The class starts at NOON and lasts 50 minutes. The class meets in Beatty Hall in Room 426, and you can expect an audience of approximately 60 students and faculty. We can usually get into the room about 10-15 before the class to setup any A/V we need, so I will meet you there, with my design teammates, at 11:45AM. After a brief introduction, you should plan on a presentation of 30-40 minutes with a 10-minute question and answer period.*

*If you could provide me with a title for your presentation, a 1-2 sentence description of the topic, a brief bio and any A/V needs, two weeks ahead of the presentation, it would be greatly appreciated.*

*If you are taking public transportation, Wentworth is a 5-minute walk from either the Ruggles Station on the Orange Line or the Museum of Fine Arts Station on the Green Line. **If you are driving to campus, please let me know as soon as possible** so I can contact Public Safety and make arrangements for you to park in the visitor section of the "West Lot" which has its entrance on Ruggles Street, near its intersection with Huntington Avenue.*

*Thank you again for your willingness to speak and if you have any questions you can reach me via email at \*\*\*\*\*@wit.edu or by phone at \*\*\*-\*\*\*-\*\*\*\*.*

*Sincerely,*

\*\*\*\*\*

Below is the list of dates and the team assigned to that date:

Wednesday:	Team Number
May 16, 2018	2
May 23, 2018	8
May 30, 2018	10
June 6, 2018	1
June 13, 2018	11
June 20, 2018	9
June 27, 2018	6
July 11, 2108	3
July 18, 2018	4
July 25, 2018	5
August 1, 2018	7

# Memorandum

TO: CIVE 5500 Students

FROM: Rich Vannozzi

DATE: May 13, 2018

RE: Speaker Series Details for Summer 2018

I have attached the final list of the presentations for the Civil Industry Lecture Series. Please remember these critical details as you plan your speaker's visit:

1. Two weeks before your guest is scheduled to speak, please be sure you have **secured a brief bio and a brief description of their presentation and email it to me as soon as you have it**. You must also let me know if your speaker has any special A/V needs. The room is set up so that if they bring a laptop they can plug it in, but if they need anything other than that I may have to direct you to DTS for assistance.
2. I have spoken to Public Safety about parking. If your speaker(s) are driving to campus you must make arrangements with Public Safety, so they know they are coming. You must do this on the Thursday or Friday of the week BEFORE they are coming, in person at the Public Safety office... (Monday of the week they are coming at the absolute latest). The way the process works is that when you speak to Public Safety they put them on a list that they have at the entrance kiosk. If your speaker is not on the attendant's list they will likely be sent to the Parker Street lot. If you call ahead of time and there is room, they will be allowed to park in one of the visitor spots. Remember that not everyone is used to driving and parking in Boston, so doing everything you can to make sure your speaker doesn't get the run around is very important. **Please send me a quick email note as soon as you have done this (or letting me know your speaker is coming via public transportation) so, again, I know it has been done.**
3. On the day of your speaker's presentation your entire team should be **dressed professionally and arrive at 426 Beatty at 11:45**. If you have class right before, get there as quick as you can. If EVERYONE in your group has class right before, please let me know the week before and I will make sure to be there early.
4. Someone from your group needs to **introduce the speaker**. This should include their name, their firm, their background (a few sentences) and the topic (a few sentences). Make sure you know exactly how to properly pronounce their name and any other words in their bio or presentation description. You should practice your introduction, so it is smooth.
5. After the speaker is done you will need to **thank them and the audience for coming**.
6. WITHIN 3 DAYS of the speaker's presentation you must send them a single page Thank you letter via snail mail. This letter should follow a standard business letter format and will need to be printed on Wentworth stationery and in a Wentworth Envelope. **Please take a picture of the signed letter before you slip it into the envelope and email it to me.**

Your grade will be based on the timely and successful completion of the above.