

1: Course Number and Name

- a. **CENG 4380:** Civil Engineering Senior Design, Fall 2021
- b. Section 010, Fridays 8:00 – 8:50am (VIN 238) and Fridays 1:00 – 4:50pm (VIN 245)

2: Credits and Contact Hours

- a. **Credits:** 3
- b. **Contact Hours:** 1 hours/week (Classroom); 4 hours/week (Laboratory)

3: Instructor Information

- a. **Course Coordinator:** Anthony Battistini
- b. **Instructors:**
 - i. Anthony Battistini, 325-486-5511, anthony.battistini@angelo.edu. Office: VIN 271. For office hours see [faculty homepage](#)¹.

4: Required Course Materials

- a. **Required Textbook:** None
- b. **Recommended Textbook:** Students are expected to have access to the various civil engineering course materials they have studied as part of their undergraduate degree program, especially in the civil engineering design courses. The instructor, other faculty, and industry partners will work with the students to help gain access to codes, specifications, and other necessary materials.
- c. **Software:** The use of CAD software and other analysis software will be necessary to complete the course project. Students have access to the software through the Engineering Computer Lab (VIN 245) and can access the platform remotely at <https://view.angelo.edu>².
- d. **Other Supplemental Materials:** Materials posted on Blackboard® Learning Management System

5: Technology Requirements

To successfully complete this course, you need to access to the Blackboard® Learning Management System, to the shared Google Drive and Documents, and to the software in the Engineering Computer Lab.

6: Specific Course Information

- a. **Catalog Description:** Civil Engineering capstone experience. Engineering concepts integrated from topics taught in sequences of upper-division courses to produce practical, efficient and feasible solutions of civil engineering problems. Computer applications are included. Final oral and written reports are required. Intended to be taken in the final semester.
- c. **Prerequisites:** Senior standing within one semester of graduation; Departmental permission
- d. **Required or elective:** Required for the BSCE Majors.

7: Specific Goals for the Course

- a. Course Learning Outcomes:
 1. Expand knowledge and understanding of civil engineering within the framework of a realistic major design project
 2. Advance proficiency with use of specifications, planning and scheduling tools, estimating tools, site investigation techniques, and sustainable design to produce a timely solution
 3. Apply geotechnical, structural, hydraulic, transportation, pavement, environmental, and/or materials design to a complex, real-world project satisfying the given constraints

4. Develop an appreciation for the role of professional and ethical responsibility in civil engineering and management practice
 5. Develop an organized technical report and oral presentation documenting the project description and proposed solution, which addresses a wide range of audiences
 6. Work as a team with other senior engineering students and clients to promote an inclusive environment in which all members' ideas are heard and valued
- b. Course Learning Outcome Mapping to ABET Criterion 3 Student Outcomes:

Table 1: Course Learning Outcomes mapped to ABET Student Outcomes

ABET Student Outcomes	1	2	3	4	5	6
1. Solve Problems			X			
2. Design			X			
3. Communication					X	
4. Ethics & Professionalism		X		X		
5. Teamwork		X				X
6. Experimentation		X				
7. Acquire New Knowledge	X	X				

8: Topics Covered

1. Project Introduction, Site Visits
2. Team-Building
3. Project Scope Determination, Gantt Charts
4. Options Analysis, Decision Matrices
5. Social and Environmental Impacts
6. Design: Environmental, Transportation, Hydrology/Hydraulics, Geotechnical, Structural, Construction
7. Weekly Meetings
8. Final Report
9. Final Presentation

9: Course Delivery and Communications

9.1: Delivery Methods

The course will meet face-to-face, once a week for class (Fridays 8:00-8:50am). During the class period, the students will be expected to set an agenda in advance, notify the instructor of the agenda, and conduct a professional business meeting in which the instructor/clients/guests are updated on the progress of the project. While all design groups may not need to provide an update every week, it is expected that each student will present a few times throughout the semester. The instructor may request time at this meeting to provide additional information or to cover select topics. All students are expected to attend weekly and to participate.

The face-to-face project time for the course (Fridays 1:00-4:50pm) will be used by the students to complete the requirements for the design project. The instructor may opt to use some of this time to cover select topics with either individual design groups or the entire project team. It is expected that you will meet during this time.

Attendance (physical or virtual) during the previously described class times and project times is required.

Any lesson materials will be added using the [Blackboard](#)³ website for the course. Most course documents will be added and organized by the students on a shared Google Drive hosted by the instructor.

Academic integrity is expected from all students at all times in accordance with [Part I, Section B.1](#)⁴ of the Angelo State University *Code of Student Conduct*.

Respect for your fellow classmates and instructor is required.

9.2: Communications

Important course announcements and changes will be sent by email via Blackboard. Students are expected to regularly check their Angelo State University email for these messages.

Students should feel free to contact the instructor regarding any issues with the class.

In-person and virtual office hours are available for students to directly meet with the instructor. Dr. Batts' office hours can be found on his [faculty website](#)⁵.

Students can also email Dr. Batts with any questions and concerns. Dr. Batts will usually respond to email within a few hours, but definitely within 24 hours Monday through Friday. Weekend replies may take longer.

10: Professionalism

Professional engineering standards apply in this class. You are expected to demonstrate a behavior consistent with the conduct of an individual practicing in the engineering profession. You are expected to: (1) come prepared for class; (2) respect faculty and peers; (3) demonstrate responsibility and accountability for your own actions; (4) demonstrate sensitivity and appreciation for diverse cultures, backgrounds, and life experiences; (5) offer and accept constructive criticism in a productive manner; (6) demonstrate an attitude that fosters professional behavior among peers and faculty; (7) be punctual to class meetings; (8) maintain a good work ethic and integrity; and (9) recognize the classroom as a professional workplace.

11: Graded Material

11.1: Final Grades

Table 2: Grade Weighting

<u>Item</u>	<u>Percent</u>
Attendance/Participation/Timeliness:	10%
Engineering Notebook	10%
Project Meetings	10%
Scope Determination	10%
Options Analysis	10%
Final Report	30%
Final Presentation	20%
Total	100%

The instructor reserves the right to adjust the weights given to the items listed above. Any adjustments will be applied evenly to the entire class and never to the detriment of your grade.

11.2: Grading Scale

The instructor will determine letter grades for the course using his professional judgment, and the following standards as described in the University Catalog:

A = excellent work B = good work C = average work D = poor work F = failing work

11.3: Class Attendance, Participation, Timeliness and Teamwork

- A portion of your grade will be based on class participation. For full credit, students are expected to arrive to class on time and adequately prepared, meaning that any assigned work is completed by the time the class period begins.
- Points will be assigned at the discretion of the instructor, and may be based upon the following:
 - Attendance throughout the class period
 - Effort displayed during group presentations
 - Communication or lack of communication with project team
- If you will be absent, please make prior arrangements with the instructor.
- If you are sick, are quarantining, are recovering, have been exposed to COVID-19, or just feel you should not attend class for your health and/or the health of others, you must contact the instructor and student project manager prior to class. When necessary, the project meeting can be livestreamed via the CENG 4380 Course Room in Blackboard Collaborate.

11.4: Engineering Notebook

- As you transition into your engineering career, you will need to be able to track your time on various aspects of different projects you work on in order to properly bill your clients. Additionally, the ability to estimate the time needed for these different aspects is a skill needed to become a project manager.
- For this class, you will need to submit a weekly log of your time as a .pdf. The log must include pertinent details like the engineering activity performed, length of time spent, and others you

worked with to complete the task. You can also use this log as a place to keep notes, questions and to explore different design solutions.

- The log will be submitted individually on Blackboard.

11.5: Project Meetings

- Your project team will receive a weekly grade for the quality of the meeting agenda, presentation slides, and ability to stay on schedule.

11.6: Scope Determination

- Your project team will submit a preliminary report and presentation outlining the current site details and the proposed project scope. This report will be submitted to the client and instructor for review and is subject to modification.
- The report/presentation should include the following:
 - Overall description of project
 - Current site requirements
 - Constraints
 - Assumptions
 - Specifications
 - Deliverables
 - Timeline

11.7: Options Analysis

- Your project team must consider at least three alternative design options for the project. The team will study each option and present the benefits and negative impacts of each option to the client. The team should use a decision matrix to rank the options.
- The team will submit an options analysis report and a presentation to the client and instructor.
- The client will have the opportunity to select the desired option along and to request any reasonable modifications.

11.8: Final Report / Presentation

- The final written report, complete with CAD drawings and engineering design calculations is due in electronic format, one week prior to the Final Presentation, currently Monday, November 15, 2021.
- In accordance with the [Angelo State University Final Exam Schedule](#)⁶ the final exam periods on December 6, 2021 and December 8, 2021 will not be used. Instead, the Final Presentation to the client, faculty, local engineers, alumni, students, and other department guests will take place on Monday, November 22, 2021. Logistical details to be determined.

12: Classroom and University Policies and Student Support

12.1: General Policies

All students are required to follow the policies and procedures presented in the [Angelo State University Student Handbook](#)⁷ and [Angelo State University Catalog](#)⁸.

12.2: Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the

Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the [Student Disability Services website](#)⁹. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

12.3: Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents of sexual misconduct directly to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: [Incident Reporting Form](#)¹⁰
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit: [ASU's Title IX Website](#)¹¹.

12.4: Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](#)¹² for more information.

12.5: Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)¹³ for more information.

12.6: Information About COVID-19

Please refer to ASU's [COVID-19 \(Coronavirus Update\)](#)¹⁴ webpage for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

12.7: Student Conduct Policies

12.7.1: Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

12.7.2: Plagiarism

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)¹⁵ in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin or SafeAssign. Resources to help you understand this policy better are available at the [ASU Writing Center](#)¹⁶.

12.7.3: Copyright Policy

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

13: Instructor Specific Information

The instructor reserves the right to change the policies and procedures of this course when he deems it necessary. Any such changes will be implemented fairly and will typically not be a detriment to your grade. The instructor will notify you of any such changes in a timely manner.

13.1: Photo/Video Policy

- Students are allowed to take photos/videos of lectures and classroom activities provided the following conditions are met:
 - The capturing of the photo/video is not disruptive to other students or the professor.
 - The photos/videos are for personal use only (not posted publicly), unless otherwise discussed.
 - Fun photos/videos are shared with the professor 😊

13.2: Diversity and Equity Statement

The instructor strives to promote a living and learning environment for outstanding growth and productivity among all students, faculty and staff. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, sexual orientation, or socio-economic background. Diversity also entails different viewpoints, philosophies, and perspectives. Course activities and attention to these aspects of diversity will help promote a culture of inclusion and belonging, and an environment where diverse opinions, backgrounds and practices have the opportunity to be voiced, heard and respected. All students in my classroom are expected to show respect for one another.

14: Course Outline

The course outline is presented in Table 3. Updates to this schedule will be provided via Blackboard.

Table 3: Course Lesson Outline

Week	Day	Date	Notes/Topic
01	Friday	8/27	Project Introduction: 8:00-8:50am; Project Site Visit with Instructor: 1:00pm-2:00pm Course Information: 3:00pm-4:00pm
02	Friday	9/3	Project Scope Determination; Gantt Charts
	Tuesday	9/7	SCOPE DETERMINATION: REPORT DUE BY 5:00PM
03	Friday	9/10	Team Meeting: Options Analysis; Decision Matrix
	Thursday	9/16	OPTIONS ANALYSIS: REPORT DUE BY 3:00PM
04	Friday	9/17	OPTIONS ANALYSIS: PRESENTATION TO CLIENT, TBD; Design Team Formation
05	Friday	9/24	Team Meeting: Agenda TBD
06	Friday	10/1	Team Meeting: Agenda TBD
07	Friday	10/8	Team Meeting: Agenda TBD
08	Friday	10/15	Team Meeting: Agenda TBD
09	Friday	10/22	Team Meeting: Agenda TBD
10	Friday	10/29	Team Meeting: Agenda TBD
11	Friday	11/5	Team Meeting: Agenda TBD
12	Friday	11/12	Team Meeting: Agenda TBD
	Monday	11/15	FINAL REPORT DUE BY 10:00PM
13	Friday	11/19	Practice Presentation with Faculty/Staff, TBD
	Monday	11/22	FINAL PRESENTATION, TBD
14	Friday	11/26	NO CLASS, THANKSGIVING BREAK
15	Friday	12/3	NO CLASS
16	Tuesday, Thursday	12/6, 12/8	NO FINAL EXAM

15: End Notes

- ¹ <https://www.angelo.edu/live/profiles/6463-anthony-battistini>
- ² <https://view.angelo.edu>
- ³ <https://blackboard.angelo.edu/>
- ⁴ <https://www.angelo.edu/student-handbook/code-of-student-conduct/misconduct.php>
- ⁵ <https://www.angelo.edu/live/profiles/6463-anthony-battistini>
- ⁶ <https://www.angelo.edu/current-students/registrar/final.php>
- ⁷ <https://www.angelo.edu/current-students/student-handbook/>
- ⁸ <https://www.angelo.edu/academics/catalog/>
- ⁹ <https://www.angelo.edu/current-students/disability-services/>
- ¹⁰ <http://www.angelo.edu/incident-form>
- ¹¹ <https://www.angelo.edu/current-students/title-ix/>
- ¹² <http://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>
- ¹³ <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>
- ¹⁴ <https://www.angelo.edu/covid-19/>
- ¹⁵ <http://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>
- ¹⁶ https://www.angelo.edu/current-students/writing-center/academic_honesty.php