Capstone

COURSE SYLLABUS

General Information:

Course: CENE 486-C
Credits: 3
Title: Capstone Prep
Section: 1
Time: T & Th from 9:35 pm to 10:50 am
Year: 2018
Room: Engineering Room 321
Term: Spring

Instructor: Mark Lamer, Meng, PE, Lecturer
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Instructor: Alarick Reiboldt, Meng, EIT, Lecturer
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Course Prerequisites:

CE: EGR386W,CENE383,376,420; ENE: EGR386W

Course Co-requisites:

CE: CENE431L; ENE: CENE270,332, 431L

Course Purpose:

Serves civil engineering and environmental engineering majors as the culminating experience that builds upon concepts taught in all previous coursework through the junior year and CENE 476. Students will learn the professional aspects of being an engineer by working in a team in order to design an engineered solution in response to a client's need. Students will proceed through the design process, adapting it to their specific project, and produce a detailed final design, documented in a report, for the client.

Student Learning Expectations/Outcomes for this Course:

Course-Specific Student Learning Expectations

Students are expected to demonstrate attainment of the following outcomes.

1 Execute the design process, considering realistic constraints and addressing societal impacts of the design. (ABET 2: an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, ABET 4: the broad education necessary to understand the impact of engineering solution sin a global, economic, environmental, and society context).

2 Develop a suite of professional skills required of practicing engineers. (ABET 3: an ability to communicate effectively, ABET 7: a recognition of the need for, and an ability to engage in life-long learning).

Textbook and Required Materials:

1 *None Required.* Students will obtain materials for project-specific background research through the internet and library sources.

Course Outline:

Week	Topics - Tentative	Deliverables	Group A
1	Intro; TBL; Impacts; Reflection Doc.		Canoe
2	Status Updates: A		Bridge
3	Status Updates: B		Ryan's Trail
4	Status Updates: C		ASCE Env.
5	Status Updates: A	30% Design Reports	CAM
6	Status Updates: B		**Group B**
7	Status Updates: C		PCI
8	Status Updates: A		Wrong Way
9	Status Updates: B		Montezuma
10	SPRING BREAK		Res. Garage
11	Status Updates: C	60% Design Reports	San Simon
12	Status Updates: A		**Group C**
13	Status Updates: B	Reflection Documents	Cinder Blocks
14	Status Updates: C	Meeting Memos	Jiko Fuel
15	Practice; UGRADS		Alt. Septic
16	Wrap up	Peer Evals	GRAIP
Finals Week		Final Report; Website; Exit Survey; Course Eval	Flood Plain
			AZ Water

Assessment of Student Learning Outcomes:

Item	%
Project Status Meetings	10
Project Status Presentations	10
Project Website	10
ALL meeting memos (Team, Tech Adv, Grading Instr)	15
Final Presentation**	15
Design Report**	25
Reflection Document	15
	100

** will be modified by peer/IAB evaluation

The course grade reported at the end of the semester will be based on the following scale.

A	> or =	90%		
B	> or =	80%	and <	90%
C	> or =	70%	and <	80%
D	> or =	60%	and <	70%
F	<	60%		

Course Policies:

Attendance

Attendance is mandatory and will be recorded; after 2 absences, 3 pts will be taken off the final total points (out of 100) for each absence. Each team must meet with their TA at least 3 times during the semester.

Professionalism

Unprofessional behavior within the team will not be tolerated. Conflicts creating a reduced learning environment for other teammates will result in (a) mandatory counseling at the NAU Counseling Center, and (b) reduced course grade by 1-2 letters.

Team Conflict Management

Team conflict is inevitable. It is NOT acceptable to do nothing, complain, and wait until the end of the course and give a negative peer evaluation. It is expected that ALL conflicts will be IMMEDIATELY addressed within the team, giving the offending member(s) an opportunity to improve.

Submittals

Submittals/attendance of/at ALL deliverables are required to pass the course. Late submittals are not accepted and will receive a grade of 0. Submittals judged unacceptable will not be graded and must be resubmitted within 5 working days; a penalty of 10% is assessed with each resubmittal. Final versions must be submitted with previous graded version.

Out-of-class work expectations

It is expected that ~10 hrs per week is dedicated to this class. Note that Friday, April 27 will be a combined day of presentations with CENE 476; full attendance is required with the exception of attending other classes.

Use of CECMEE Laboratories

Any teams using any CECMEE Lab (including the Field Station) or performing site visits must complete the EHS Safety Training and Field Safety courses (online) and acknowledge reading of all SOPs for tool use. You must receive approval by the CENE Lab Instructor prior to accessing any laboratory facility. Any failure to comply with safety or cleanup requirements will be reflected in your course grade.

Grade Appeals

Any questions regarding grading of submittals must be requested within 5 working days of receipt of the graded submittal.

Emergency Snow Closure

Should the university be closed during any time when final presentations are scheduled, Skype will be used to present material to the instructors.

Academic Integrity

CECMEE Departmental Academic Integrity Policy (see: http://nau.edu/CEFNS/Engineering/Civil-Environmental/Student-Resources/Departmental-Policies-/-Forms/)

Faculty members may ask students to affirm in writing that they have neither given nor received unauthorized aid on an examination or assignment.

University Policies

https://nau.edu/OCLDAA/_Forms/UCC/SyllabusPolicyStmts2-2014/

[select outcome assessed]

This course does not provide minor contributions to program outcomes.

a) an ability to apply knowledge of mathematics, science, and engineering.
b) an ability to design and conduct experiments, as well as to analyze and interpret data.
c) an ability to design a system, component, or process to meet desired needs within realistic cons
d) an ability to function on multidisciplinary teams.
e) an ability to identify, formulate, and solve engineering problems.
f) an understanding of professional and ethical responsibility.
g) an ability to communicate effectively.
h) the broad education necessary to understand the impact of engineering solutions in a global, ec
i) a recognition of the need for, and an ability to engage in life-long learning.
j) a knowledge of contemporary issues.
k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering

Student Performance Level

[Select]
Knowledge
Comprehension
Application
Synthesis
Evaluation

ealistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

a global, economic, environmental, and societal context.

engineering practice.

bility, and sustainability.