

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).  
See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**TRIAL COURSE OR NEW COURSE PROPOSAL**  
(Attach copy of syllabus)

**SUBMITTED BY:**

Department	CEE	College/School	CEM
Prepared by	Nathan Belz	Phone	907-474-5765
Email Contact	npbelz@alaska.edu	Faculty Contact	Nathan Belz

**1. ACTION DESIRED**

Trial Course  New Course

**2. COURSE IDENTIFICATION:**

Dept  Course #  No. of Credits

Justify upper/lower division status & number of credits:

**3. PROPOSED COURSE TITLE:**

Design of Engineered Systems I

**4. To be CROSS LISTED?**

If yes, Dept:  Course #

NOTE: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.

**5. To be STACKED?\***

If yes, Dept.  Course #

How will the two course levels differ from each other? How will each be taught at the appropriate level?:

\* Use only one Format 1 form for the stacked course (not one for each level of the course!) and attach syllabi. Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi (undergraduate and graduate versions) will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.

**6. FREQUENCY OF OFFERING:**

Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

**7. SEMESTER & YEAR OF FIRST OFFERING** (Effective AY2015-16 if approved by 3/31/2015; otherwise AY2016-17)

Fall 2016

**8. COURSE FORMAT:**

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the Core Review Committee.

COURSE FORMAT:  
(check all that apply)

1  2  3  4  5  6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc)

Lectures

**9. CONTACT HOURS PER WEEK:**

LECTURE hours/weeks  LAB hours /week  PRACTICUM hours /week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/guidelines-for-computing/> for more information on number of credits.

OTHER HOURS (specify type)

10. **COMPLETE CATALOG DESCRIPTION** including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):

CE437 Design of Engineered Systems I 3.0cr (3+0)  
Critical skills for a successful engineer with emphasis on: project planning; preliminary investigations; permitting; reading, interpreting, and creating plans and specifications; use and technical applications of AutoCAD; proposal writing and project management; continuing education and professional registration.  
Prerequisites: CE senior standing and COMM F131X or COMM F141X; ENGL F111X, ENGL F211X or ENGL F213X. Offered Fall.

11. **COURSE CLASSIFICATIONS:** Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.

H = Humanities  S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form. YES:  NO:

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6  W = Writing Intensive, Format 7  X = Baccalaureate Core

11.A Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.

YES  NO

12. **COURSE REPEATABILITY:**

Is this course repeatable for credit? YES  NO

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit?  TIMES  
If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course?  CREDITS  
If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?  CREDITS

13. **GRADING SYSTEM:** Specify only one. Note: Changing the grading system for a course later on constitutes a Major Course Change - Format 2 form.

LETTER:  PASS/FAIL:

**RESTRICTIONS ON ENROLLMENT (if any)**

14. **PREREQUISITES**

CE senior standing and COMM F131X or COMM F141X; ENGL F111X, ENGL F211X or ENGL F213X.

These will be required before the student is allowed to enroll in the course.

15. **SPECIAL RESTRICTIONS, CONDITIONS**

16. **PROPOSED COURSE FEES**

\$

Has a memo been submitted through your dean to the Provost for fee approval? Yes/No

17. **PREVIOUS HISTORY**

Has the course been offered as special topics or trial course previously? Yes/No  NO

If yes, give semester, year, course #, etc.:



**18. ESTIMATED IMPACT**

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

This course will require the use of classroom and computer lab space. Course will need to be added to the workload of a faculty member. However, since this course is taking the place of two existing courses in the CE curriculum, it is not additional teaching load above and beyond the existing needs of the department.

**19. LIBRARY COLLECTIONS**

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No

Yes

Proposed course will draw on same materials/collections, equipment, and services as the existing CE438 course.

**20. IMPACTS ON PROGRAMS/DEPTS**

What programs/departments will be affected by this proposed action? Include information on the Programs/Departments contacted (e.g., email, memo)

Civil Engineering/School of Engineering and Mines. No impacts on other programs or departments are anticipated.

**21. POSITIVE AND NEGATIVE IMPACTS**

Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

The proposed course is anticipated to improve the overall senior design/capstone offering and provide the students with a more comprehensive and robust engineering experience. This will result in more marketable undergraduate students who are better prepared to enter the workforce. Since senior design projects are typically service learning projects, they directly impact and improve the community. By requiring a second semester of senior design, the deliverables from these projects will be of better quality and worthy of being associated with UAF. No negative impacts are anticipated.

**JUSTIFICATION FOR ACTION REQUESTED**


The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

The addition of this course is to improve student preparedness for the engineering profession. One semester is too short to cover the material needed for meaningful senior design projects and effectively engage students in service learning projects that meet our ABET accreditation outcomes. CE437 will be a prerequisite for CE438 to make the senior design/capstone a full year. Moving the design components to a separate semester will allow the CE department to focus on improving student writing and communication which consistently is flagged in our SLOA and ABET evaluations as being a weakness. The addition of this course is in the best interest of our civil engineering students.

**APPROVALS: Add additional signature lines as needed.**

 Date 9/25/2015  
Signature, Chair, Program/Department of: \_\_\_\_\_

 Date 9-28-15  
Signature, Chair, College/School Curriculum Council for: CEM

 Date 10/5/15  
Signature, Dean, College/School of: CEM

Offerings above the level of approved programs must be approved in advance by the Provost.

\_\_\_\_\_  
Signature of Provost (if above level of approved programs) Date \_\_\_\_\_

See my notes

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	
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Signature, Chair

Faculty Senate Review Committee: \_\_\_Curriculum Review \_\_\_GAAC

\_\_\_Core Review \_\_\_SADAC

ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

	Date	
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Signature, Chair, Program/Department of:

	Date	
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Signature, Chair, College/School Curriculum Council for:

	Date	
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Signature, Dean, College/School of:

Sk's notes on syllabus

Campus CRC will definitely ask how individual students will be graded in team assignments. Need Rubric.

class calendar needs more details — Sk.

I ~~had~~ had sent these comments to Nathan on first draft, but no changes were made — Sk

**CE 437 Design of Engineered Systems I**  
Tentative Fall 2016 Course Syllabus (updated September 25, 2015)

<b>Instructor</b>	Paul Perreault pvperreault@alaska.edu
<b>Lectures</b>	(time and location TBD)
<b>Office Hours</b>	(time and location TBD)
<b>Catalog Data</b>	CE437
<b>Course Title</b>	Design of Engineered Systems I
<b>Prerequisites</b>	COMM F131X or COMM F141X; ENGL F111X, ENGL F211X or ENGL F213X; last year of civil engineering BS program.
<b>Catalog Description</b>	Critical skills for a successful engineer with emphasis on reading, interpreting, and creating plans and specifications; proposal writing and project management; continuing education and professional registration.
<b>Credit</b>	3.00 semester hours
<b>Textbook and Readings</b>	There is no required textbook for this course; readings from the internet, class website, or class handouts will be assigned and distributed as needed.
<b>Course Objectives</b>	Gain experience with management and communication aspects of the engineering process leading to the design of an engineered project; expose students to working in a team environment on real-world projects; work step-by-step through a project from obtaining the design contract to the necessary components of construction documentation.
<b>Course Outcomes</b>	This course will help students achieve the following: experience working with practicing engineers on local projects to develop an understanding of professional and ethical responsibility; develop comprehensive plans, specifications, and presentation materials; appreciation of the need for effective communication skills; an understanding of ethical and responsible engineering. These are the essential skills needed for CE 438 – Design of Engineered Systems, where students will work in teams on real-world service learning and design projects.
<b>Communication</b>	Outside of scheduled lectures & office hours, email is the official form of communication. Students are expected to check their UAF email accounts for course updates as it will be used for general announcements and distribution of course materials as necessary.



# CE 437 Design of Engineered Systems I

Tentative Fall 2016 Course Syllabus (updated September 25, 2015)

## Grading

5% Class and Meeting Attendance  
30% Individual Assignments  
(Resumes, Letters, AutoCAD, etc)  
40% Team Assignments  
(Qualifications Statement, Problem Definitions, Project Schedule, Project Budget) **Note: Student roles will rotate throughout the semester and each student will be graded on their individual effort.**  
10% Interaction with Peers, Supervisors, Clients  
15% Final Exam

A	90-100%	D	60-69%
B	80-89%	F	0-59%
C	70-79%		

### General Scoring Rubric

1. Demonstrates basic English mechanics	20 pts
2. Clarity of writing and Logic	30 pts
3. Professionalism of report/presentation	35 pts
4. Delivered on time	15 pts

## Academic Integrity

Students are expected to and should strictly comply with UAF's [Student Code of Conduct](#). Offenses against the Code of Academic Integrity and Student Code of Conduct are deemed serious and insult the integrity of the entire academic community. Any suspected violations of the code are taken very seriously. Further university policies addressing plagiarism, fabrication, collusion, and cheating can be found on pp. 50-52 in [Academics and Regulations](#). Any student found violating these codes will be given an automatic failing grade for that assignment. More than one violation will result in a failing grade for the course and will involve disciplinary action. Unexcused Tardiness or absence will affect scoring and final grade. Unexcused late assignments will result in a reduction of 10 percent per calendar day.

## Disabilities Services

If you have a formal accommodation plan developed in conjunction with the [UAF Center for Health and Counseling](#) office please contact me as soon as possible at the start of the semester. If you would like to learn more about your options, these services, or discuss the supports that you need in order to learn well in this class, please contact the coordinator of [Disability Services](#) at 474-5655.

## Support Services

Students are encouraged to take advantage of the [UAF Writing Center](#) (located in 801 Gruening) is staffed with English Department teaching assistants and undergraduate students that can assist you in all phases of the writing process. In addition, the [UAF Math Lab](#) offers advice, tutoring, and assistance for classes involving mathematics and statistics.

# CE 437 Design of Engineered Systems I

Tentative Fall 2016 Course Syllabus (updated September 25, 2015)

## TENTATIVE FALL 2016 SCHEDULE

<b>Week</b>	<b>Activity / Content</b>
1	Introduction: Motivation and Ethics <a href="#">Homework 1 Assigned</a>
2	Getting a Job: Positions, Employers, and Interviews <a href="#">Homework 1 Due</a> <a href="#">Homework 2 Assigned</a>
3	Working in a Team Environment, Forms of Organizations <a href="#">Homework 2 Due</a> <a href="#">Homework 3 Assigned</a>
4	Continuing Education and Professional Registration <a href="#">Homework 3 Due</a> <a href="#">Homework 4 Assigned</a>
5	Requests for Qualifications or Proposals <a href="#">Homework 4 Due</a> <a href="#">Homework 5 Assigned</a>
6	Problem Definition & Design of Budgets <a href="#">Homework 5 Due</a> <a href="#">Homework 6 Assigned</a>
7	Statement of Qualifications for Employers and Projects <a href="#">Homework 6 Due</a> <a href="#">Homework 7 Assigned</a>
8	Team Interviews & Project Selection <a href="#">Homework 7 Due</a>
9	Design Process & Generating Design Notebooks <a href="#">Homework 8 Assigned</a>
10	Design Scheduling and Bidding <a href="#">Homework 8 Due</a> <a href="#">Homework 9 Assigned</a>
11	Reading of Plans and Drawings; CAD for Contract Documents <a href="#">Homework 9 Due</a> <a href="#">Homework 10 Assigned</a>
12	Developing and Interpreting Specifications <a href="#">Homework 10 Due</a> <a href="#">Homework 11 Assigned</a>
13	Regulatory Constraints and Permitting <a href="#">Homework 11 Due</a>
14	Project Presentations
15	Final Examination