## CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL

**SUBMITTED BY:**

<table>
<thead>
<tr>
<th>Department</th>
<th>CEE</th>
<th>College/School</th>
<th>CEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>Andrew Metzger</td>
<td>Phone</td>
<td>907.474.6120</td>
</tr>
<tr>
<td>Email Contact</td>
<td><a href="mailto:atmetzger@alaska.edu">atmetzger@alaska.edu</a></td>
<td>Faculty Contact</td>
<td>Andrew T. Metzger</td>
</tr>
</tbody>
</table>

### 1. COURSE IDENTIFICATION:

<table>
<thead>
<tr>
<th>Dept</th>
<th>CE</th>
<th>Course #</th>
<th>433</th>
<th>No. of Credits</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE TITLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reinforced Concrete Design</td>
</tr>
</tbody>
</table>

### 2. ACTION DESIRED:

- **Change Course** [X]
- **If Change, indicate below what change.**
- **Drop Course**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PREQUISITES</th>
<th>TITLE</th>
<th>FREQUENCY OF OFFERING</th>
<th>COURSE CLASSIFICATION</th>
</tr>
</thead>
<tbody>
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<table>
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<tr>
<th>CREDITS (including credit distribution)</th>
<th>X</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>CROSS-LISTED</th>
<th>Dept.</th>
<th>(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)</th>
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</table>

<table>
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<tr>
<th>STACKED (400/600)</th>
<th>Include syllabi.</th>
<th>OTHER (please specify)</th>
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<td></td>
<td></td>
<td>Change to a (3+0) course; the lab for this course has not been offered for several years, and will not be offered in the future. Offered in Spring.</td>
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### 3. 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:**

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [X] 6 weeks to full semester

**Mode of delivery**

- [ ] Lecture

### 4. COURSE CLASSIFICATIONS:

(undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

- [ ] H = Humanities
- [ ] S = Social Sciences

**Will this course be used to fulfill a requirement for the baccalaureate core?**

- [ ] YES
- [ ] NO
- [X] X

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

- [ ] O = Oral Intensive
- [ ] W = Writing Intensive
- [ ] Natural Science, Format 6 also submitted
- [ ] Format 7 submitted
- [ ] Format 8 submitted

### 5. COURSE REPEATABILITY:

**Is this course repeatable for credit?**

- [ ] YES
- [ ] NO
- [X] X

**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 with variable credit, what is the maximum number of credit hours that may be earned for this course?**

- [ ] CREDITS
6. CURRENT CATALOG DESCRIPTION AS IT APPEARS IN THE CATALOG: including dept., number, title and credits

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3 Credits    Offered Fall
Behavior of reinforced concrete members. Design philosophies and current practices. Flexural members, to include: rectangular, T-beams and one-way slabs. Crack control, anchorage, development lengths and deflections. Axially loaded members. Laboratory experiments. Current ACI 318 Code used. Special fees apply Prerequisites: CE F331; ES F331. (2+3)

7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES: (Underline new wording strike through old wording and use complete catalog format including dept., number, title, credits and cross-listed and stacked.) PLEASE SUBMIT NEW COURSE SYLLABUS. For stacked courses the syllabus must clearly indicate differences in required work and evaluation for students at different levels.

CE 433    Reinforced Concrete Design
3 Credits    Offered Fall Spring
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8. IS THIS COURSE CURRENTLY CROSS-LISTED?
   YES/NO    NO
   If Yes, DEPT        NUMBER
   (Requires written notification of each department and dean involved. Attach a copy of written notification.)

9. GRADING SYSTEM: Specify only one
   LETTER:    X
   PASS/FAIL:

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

    none

11. 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    X    Yes

12. 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 Department

13. POSITIVE AND NEGATIVE IMPACTS
    Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

    Reinforced Concrete Design is a necessary skill for all sub-disciplines of Civil Engineering. Offering this course each spring will provide students with the opportunity to gain this necessary knowledge prior to graduation. Offering the course in the spring will not interfere with the curriculum flow of prerequisites and required courses.

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. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

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**APPROVALS:**

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<tr>
<th>Name of Approval Authority</th>
<th>Signature</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Program/Department Chair</td>
<td>David L. Moore</td>
<td>2-11-11</td>
</tr>
<tr>
<td>Associate Dean of CEM</td>
<td>Helen Vazquez</td>
<td>2/23/11</td>
</tr>
<tr>
<td>Dean of CEM</td>
<td></td>
<td>2/24/11</td>
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</table>

Signature of Provost (if applicable)

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

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

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

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ATTACH COMPLETE SYLLABUS (as part of this application).
Note: The guidelines are online: http://www.uaf.edu/uafgov/faculty/cd/syllabus.html
The department and campus wide curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course change will be denied.

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During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:
   ☐ Title, ☐ number, ☐ credits, ☐ prerequisites, ☐ location, ☐ meeting time
   (make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:
   ☐ Name, ☐ office location, ☐ office hours, ☐ telephone, ☐ email address.

3. Course readings/materials:
   ☐ Course textbook title, ☐ author, ☐ edition/publisher.
   ☐ Supplementary readings (indicate whether ☐ required or ☐ recommended) and
   ☐ any supplies required.

4. Course description:
   ☐ Content of the course and how it fits into the broader curriculum;
   ☐ Expected proficiencies required to undertake the course, if applicable.
   ☐ Inclusion of catalog description is strongly recommended, and
   ☐ Description in syllabus must be consistent with catalog course
description.

5. ☐ Course Goals (general), and (see #6)

6. ☐ Student Learning Outcomes (more specific)

7. Instructional methods:
   ☐ Describe the teaching techniques (e.g: lecture, case study, small group
discussion, private instruction, studio instruction, values clarification,
games, journal writing, use of Blackboard, audio/video conferencing, etc.).

8. Course calendar:
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so that it is clear that the instructor has thought this through and will
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Instead, give each lab a title that describes its content). You may call
the outline Tentative or Work in Progress to allow for modifications during
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9. Course policies:
   ☐ Specify course rules, including your policies on attendance, tardiness,
class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:
    ☐ Specify how students will be evaluated, ☐ what factors will be
    included, ☐ their relative value, and
    ☐ how they will be tabulated into grades (on a curve, absolute scores,
etc.).

11. Support Services:
    ☐ Describe the student support services such as tutoring (local and/or
    regional) appropriate for the course.

12. Disabilities Services:
The Office of Disability Services implements the Americans with Disabilities
Act (ADA), and insures that UAF students have equal access to the campus and
course materials.
    ☐ State that you will work with the Office of Disabilities Services (208
    WHIT, 474-5655) to provide reasonable accommodation to students with
disabilities."
UNIVERSITY OF ALASKA FAIRBANKS DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

CE 433 Reinforced Concrete Design Syllabus Spring 2011 – 3 Credits

Instructor: Paul V. Perreault, MSCE, PE

Office: Duckering, Room 345
Phone: 3224753 (ask: "Is this an okay time to talk?")
Email: pyperreault@alaska.edu, or engineer@cbna.org

Time: M, W, F 11:45a – 12:45p
Location: Duckering, Room 344

Office Hours: 9:00a – 11:00a M, W or by appointment. And, if you see me, regardless of where, I am open to your questions. Just ask, "Is this an okay time to talk?"

Prerequisites: CE F331, ES F331

Required Texts: Building Code Requirements for Structural Concrete and Commentary; ACI 31808. American Concrete Institute, Farmington Hill, MI. 2008. (Please bring this text and a calculator to every class.)


Other References: Concrete Reinforcing Steel Institute Design Handbook. (Selected pages to be provided by the instructor.) Many, many weblinks to other references. NOTE: These additional references are for your general information. First, use the ACI code and the course text.

Course Description: Behavior of reinforced concrete members. Design philosophies and current practices. Flexural members, to include: rectangular, T-beams and one-way slabs. Crack control, anchorage, development lengths and deflections. Axially loaded members.

Course Goals: This class is designed to be a first course in the design of steel reinforced concrete construction. General design philosophy as well as building components and load paths will be discussed. Concepts surrounding concrete as a building material will be explored. The design of elementary building components using steel reinforced concrete will be studied. The course is taught in a lecture format.
Course Content, Selected Portions of:

Week 1  Concrete
         What is concrete?
Week 2  Concrete constituents
         Concrete testing standards
Week 3  Concrete mix design
Week 4  Design Criteria/ Building Codes
Week 5  Loads and Load Combinations
         Reinforcing Steel
Week 6  Beam Design – bending
Week 7  Beam Design – shear
Week 8  Beam Design – torsion
Week 9  Beam Design – serviceability
Week 10 Beam Design – deep beams
        Concrete Slab Design
Week 11 Column and Wall Design
Week 12 Designing for Combined Compression and Bending
Week 13 Reinforcement detailing
Week 14 Design of Concrete Footings
        Anchor Bolt Design

Student Learning Outcomes: the student should leave the course with knowledge of how to use ACI 318 to design reinforced concrete elements. The level of competency should be consistent with an entry-level practicing engineer and Professional Engineering Exam questions on the topic.

Evaluation: Grades are based on absolute scores
            Homework  40%
            Project  15%
            Midterm Exam  20%
            Final Exam  20%
            Classroom Participation  5%

Course Policies: Regular attendance and participation is expected, as well as professional behavior in class (show up on time, no talking during class, no walking out of/back in to class, no wearing headphones, no texting, and cells phones and computers are to be turned off in class, no eating in class – drinks are permissible).

Disability Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disability Services (203 WHIT, 474-7043) to provide reasonable accommodations to students with disabilities.
### CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL

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<tr>
<td>CEE</td>
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<tr>
<th>Prepared by</th>
<th>Phone</th>
<th>Faculty Contact</th>
</tr>
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<tbody>
<tr>
<td>Andrew Metzger</td>
<td></td>
<td>Andrew T. Metzger</td>
</tr>
</tbody>
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<tr>
<th>Email Contact</th>
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<tbody>
<tr>
<td><a href="mailto:ametzger@alaska.edu">ametzger@alaska.edu</a></td>
</tr>
</tbody>
</table>

#### 1. COURSE IDENTIFICATION:

- Dept: CE  
- Course #: 433  
- No. of Credits: 3

**COURSE TITLE**: Reinforced Concrete Design

#### 2. ACTION DESIRED:

- Change Course [X]  
- If Change, indicate below what change.
- Drop Course [ ]

**NUMBER**  
**PREQUISITES**  
**CREDITS (including credit distribution)**  
**CROSS-LISTED**  
**STACKED (400/600)**  
**OTHER (please specify)**

<table>
<thead>
<tr>
<th>TITLE</th>
<th>FREQUENCY OF OFFERING</th>
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Change to a (3+6) course; the lab for this course has not been offered for several years, and will not be offered in the future. Offered in Spring.

#### 3. 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**:
- [ ] 1  
- [ ] 2  
- [ ] 3  
- [ ] 4  
- [ ] 5  
- [X] 6 weeks to full semester

**OTHER FORMAT (specify all that apply)**

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

- [ ] lecture

#### 4. COURSE CLASSIFICATIONS:

(undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

- [H] Humanities
- [S] Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? [X] NO

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

- [O] Oral Intensive, Format 6 also submitted
- [W] Writing Intensive, Format 7 submitted

Natural Science, Format 8 submitted

#### 5. COURSE REPEATABILITY:

- [X] Is this course repeatable for credit? 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

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8. IS THIS COURSE CURRENTLY CROSS-LISTED?

YES/NO NO
If Yes, DEPT NUMBER

(Requires written notification of each department and dean involved. Attach a copy of written notification.)

9. GRADING SYSTEM: Specify only one

LETTER: X PASS/FAIL: 

10. ESTIMATED IMPACT

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

none

11. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (kljen森@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 X Yes

12. 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)

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APPROVALS:

Signature, Chair, Program/Department of: [Signature] Date 2/11/11

Signature, Chair, College/School Curriculum Council for: [Signature] Date 2/23/11

Signature, Dean, College/School of: [Signature] Date 2/24/11

Signature of Provost (if applicable)
Offerings above the level of approved programs must be approved in advance by the Provost.

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

Signature, Chair, UAF Faculty Senate Curriculum Review Committee

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

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UNIVERSITY OF ALASKA FAIRBANKS DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

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Office: Duckering, Room 345  
Phone: 3224753 (ask: "Is this an okay time to talk?")  
Email: pvperreault@alaska.edu, or engineer@cbna.org

Time: M, W, F 11:45a – 12:45p

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Office Hours: 9:00a – 11:00a M, W or by appointment. And, if you see me, regardless of where, I am open to your questions. Just ask, "Is this an okay time to talk?"

Prerequisites: CE F331, ES F331

Required Texts: Building Code Requirements for Structural Concrete and Commentary; ACI 31808. American Concrete Institute, Farmington Hill, MI. 2008. (Please bring this text and a calculator to every class.)


Other References: Concrete Reinforcing Steel Institute Design Handbook. (Selected pages to be provided by the instructor.) Many, many weblinks to other references. NOTE: These additional references are for your general information. First, use the ACI code and the course text.

Course Description: Behavior of reinforced concrete members. Design philosophies and current practices. Flexural members, to include: rectangular, T-beams and one-way slabs. Crack control, anchorage, development lengths and deflections. Axially loaded members.

Course Goals: This class is designed to be a first course in the design of steel reinforced concrete construction. General design philosophy as well as building components and load paths will be discussed. Concepts surrounding concrete as a building material will be explored. The design of elementary building components using steel reinforced concrete will be studied. The course is taught in a lecture format.
Course Content, Selected Portions of:

Week 1     Concrete
           What is concrete?
Week 2     Concrete constituents
           Concrete testing standards
Week 3     Concrete mix design
Week 4     Design Criteria/ Building Codes
Week 5     Loads and Load Combinations
           Reinforcing Steel
Week 6     Beam Design – bending
Week 7     Beam Design – shear
Week 8     Beam Design – torsion
Week 9     Beam Design – serviceability
Week 10    Beam Design – deep beams
           Concrete Slab Design
Week 11    Column and Wall Design
Week 12    Designing for Combined Compression and Bending
Week 13    Reinforcement detailing
Week 14    Design of Concrete Footings
           Anchor Bolt Design

Student Learning Outcomes: the student should leave the course with knowledge of how to use ACI 318 to design reinforced concrete elements. The level of competency should be consistent with an entry-level practicing engineer and Professional Engineering Exam questions on the topic.

Evaluation: Grades are based on absolute scores
Homework                             40%
Project                              15%
Midterm Exam                         20%
Final Exam                           20%
Classroom Participation             5%

Course Policies: Regular attendance and participation is expected, as well as professional behavior in class (show up on time, no talking during class, no walking out of/back in to class, no wearing headphones, no texting, and cells phones and computers are to be turned off in class, no eating in class – drinks are permissible).

Disability Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disability Services (203 WHIT, 474-7043) to provide reasonable accommodations to students with disabilities.