I. Roll
() Alberta Harder (FS)  () Vacant (CBPP)  () Kevin Keating (LIB)
() Utpal Dutta (FS)  () Vacant (COH)  () Rick Adams (KPC)
() Francisco Miranda (Chair)  () Vacant (COH)  () Sheri Denison (Mat-su)
() Barbara Harville (CAS)  () Irasema Ortega (COE)  () Jared Griffin (Kod)
() Vacant (CAS)  () Carrie King (CTC)  () Christina Stuive (ADV)
() Vacant (CAS)  () Jeff Hoffman (SOE)

Ex-Officio Members
() Susan Kalina
() Lora Volden
() Scheduling and Publications

II. Approval of the Agenda (pg. 1-2)

III. Approval of Meeting Summary (pg. 3-4)

IV. Administrative Report
A. Vice Provost for Undergraduate Academic Affairs Susan Kalina
B. University Registrar Lora Volden

V. Chair’s Report
A. UAB Chair- Francisco Miranda
B. GERC

VII. Program/Course Action Request- Second Readings
Chg University Honors Program (pg. 5-21)

VIII. Program/Course Action Request- First Readings
Chg MATH A105 Intermediate Algebra (3 cr)(3+0)(pg. 22-28)
Chg MATH A261 Introduction to Discrete Mathematics (3 cr)(3+0)(pg. 29-31)
Add MATH A309 Introduction to Number Theory (3 cr)(3+0)(pg. 32-34)
Add MATH A424 Advanced Engineering Mathematics: Linear Algebra & Numerical Analysis (3 cr)(3+0)(pg. 35-37)
Chg MATH A426 Numerical Analysis (3 cr)(3+0)(pg. 41-43)
Add MATH A431 Introduction to Differential Geometry (3 cr)(3+0)(pg. 44-46)
Chg Minor, Mathematics (pg. 47-50)
Chg Bachelor of Arts, Mathematics (pg. 51-57)
Chg Bachelor of Science, Mathematics (pg. 58-62)
Add PETR A101 Industrial Hand Tools (1 cr)(0+3)(pg. 63-68)
Add ME A460 Turbomachinery (stacked with ME A660)(3 cr)(2+2)(pg. 69-72)
Chg BIOM A490 Selected Lecture Topics in Biomedicine (stacked with BIOM A690) (1-3 cr)(1-3+0)(pg. 73-82)
Chg MUS A221 History of Western Art Music I (3 cr)(3+0)(pg. 83-88)
<table>
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<td>Chg</td>
<td>MUS A222</td>
<td>History of Western Art Music II (3 cr)(3+0)(pg. 89-93)</td>
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<td>Add</td>
<td>AKNS A461</td>
<td>Decolonizing Methodologies (cross-listed with ANTH A460) (3 cr)(3+0)(pg. 94-97)</td>
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<td>Minor, Alaska Native Studies (pg. 98-100)</td>
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<td>ANTH A461</td>
<td>Decolonizing Methodologies (cross-listed with AKNS A461) (3 cr)(3+0)(pg. 101-105)</td>
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<td>Chg</td>
<td>Bachelor of Arts, Anthropology (pg. 106-109)</td>
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<td>Chg</td>
<td>Bachelor of Science, Anthropology (pg. 110-113)</td>
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<td>Chg</td>
<td>AET A102</td>
<td>Methods of Building Construction (3 cr)(3+0)(pg. 123-129)</td>
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<tr>
<td>Chg</td>
<td>AET A111</td>
<td>Civil Construction Drawings (3 cr)(2+3)(pg. 130-134)</td>
</tr>
<tr>
<td>Chg</td>
<td>AET A121</td>
<td>Architectural Construction Drawings (3 cr)(2+3)(pg. 135-139)</td>
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<td>AET A123</td>
<td>Codes and Standards (3 cr)(3+0)(pg. 140-146)</td>
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<td>Chg</td>
<td>AET A131</td>
<td>Structural Construction Designs (3 cr)(2+3)(pg. 147-151)</td>
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<td>Mechanical and Electrical Technology (4 cr)(3+2)(pg. 152-158)</td>
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<td>Mechanical and Electrical Construction Drawings (3 cr)(2+3)(pg. 159-163)</td>
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<td>AET A213</td>
<td>Civil Technology (4 cr)(2+4)(pg. 170-175)</td>
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<td>AET A231</td>
<td>Structural Technology (4 cr)(2+4)(pg. 176-181)</td>
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<td>AET A282</td>
<td>Advanced CADD Techniques (4 cr)(2+4)(pg. 182)</td>
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<td>Occupational Endorsement Certificate, CADD for Building Construction (pg. 184)</td>
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<td>Chg</td>
<td>Undergraduate Certificate, Structural Technology Certificate (pg. 185-189)</td>
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<td>Undergraduate Certificate, Mechanical/Electrical Technology Certificate (pg. 190-193)</td>
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<td>Undergraduate Certificate, Civil Technology Certificate (pg. 194-198)</td>
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<td>Undergraduate Certificate, Architectural Technology Certificate (pg. 199-203)</td>
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<td>Methods of Building Construction (3 cr)(3+0)(pg. 212)</td>
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<td>Codes and Standards (3 cr)(3+0)(pg. 213)</td>
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<td>Structural Technology (4 cr)(2+4)(pg. 215)</td>
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<td>Chg</td>
<td>CM A331</td>
<td>Statistics and Strengths of Materials (3 cr)(3+0)(pg. 216-220)</td>
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<td>Chg</td>
<td>CM A495</td>
<td>Advanced Construction Management Internship (3 cr)(1+15)(pg. 221-226)</td>
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</table>

VII. Old Business
Second Read of the 2015-2015 Purge List: Academic Courses (pg. 227-234)

IX. New Business

X. Informational Items and Adjournment:
March 20, 2015
2:00-5:00
ADM 204

I. Roll
(x) Alberta Harder (FS) ( ) Vacant (CBPP) (x) Kevin Keating (LIB)
(x) Utpal Dutta (FS) ( ) Vacant (COH) () Rick Adams (KPC)
(x) Francisco Miranda (Chair) ( ) Vacant (COH) (x) Sheri Denison (Mat-su)
(e) Barbara Harville (CAS) (x) Irasema Ortega (COE) (x) Jared Griffin (Kod)
( ) Vacant (CAS) (x) Carrie King (CTC) (x) Christina Stuive (ADV)
( ) Vacant (CAS) (x) Jeff Hoffman (SOE)

Ex-Officio Members
(e) Susan Kalina
(x) Lora Volden
(x) Scheduling and Publications

II. Approval of the Agenda (pg. 1-2)
Approved

III. Approval of Meeting Summary (pg. 3-5)
Approved

IV. Administrative Report
A. Vice Provost for Undergraduate Academic Affairs Susan Kalina

B. University Registrar Lora Volden
Fall courses will be viewable on Monday, March 23rd.
Priority registration opens up on Friday, April 3rd.

V. Chair’s Report
A. UAB Chair- Francisco Miranda

B. GERC

VII. Program/Course Action Request- Second Readings
Chg University Honors Program (pg. 6-22)
Postponed to Friday, March 27, 2015

VIII. Program/Course Action Request- First Readings
Chg BA A231 Fundamentals of Supervision (3 cr)(3+0)(pg. 23-27)
Postponed until faculty initiator can attend

Chg LS A101 Intro to Academic Library Research (1 cr)(1+0)(pg. 28-32)
Approved for second reading

Chg DN A119 Principles of Nutrition (3 cr)(3+0)(pg. 33-38)
Approved for second reading
Chg  DN A492  Senior Seminar in Dietetics (1 cr)(1+0)(pg. 39-42)  
Approved for second reading

Chg  Associate of Applied Science, Culinary Arts (pg. 43-48) 
Approved for second reading

Chg  Bachelor of Science in Dietetics (pg. 49-61) 
Approved for second reading

Add  EE A317  Electrical Machines and Energy Conversion (3 cr)(3+0)(pg. 62-64) 
Accepted for first reading

Chg  ENGR A105A  Engineering Graphics (1 cr)(1+0)(pg. 65-67) 
Approved for second reading

Chg  ENGR A105B  Computer Aided Graphics (1 cr)(1+0)(pg. 68-70) 
Approved for second reading

Dlt  ENGR A105C  Engineering Computer-Aided Design III (1 cr)(2+3)(pg. 71) 
Approved for second reading

VII. Old Business

IX. New Business

X. Informational Items and Adjournment: 3:00pm
University Honors College Curriculum Proposal Summary

The University Honors College Task Force has developed a proposal for new UHC curriculum. The attached proposal does not address all curricular items housed in UHC, it is a proposal for how to transform the main honors program (The Honors Core Program). It leaves aside the two other curricular items in UHC, the 49th State Fellows and the Complex Systems Program. The UHCTF thought it best to implement the main program in Fall 2015 while taking more time to decide on the future of the ancillary programs.

The proposal has several innovations. The primary change is splitting the honors curriculum into lower and upper division options. The second innovation is the designations of certain sections of a course as honors section. A separate memo is included which proposes this policy change.

Options in the University Honors Program

The tiered approach to honors offers many advantages over a four year program.

- University honors compatible with every undergraduate degree granting program on campus, including associates degrees.
- Makes explicit that honors has two different pedagogical functions, (a) to enhance basic college skills and content learning and (b) to promote more in depth exploration of the student’s major through independent experiential learning.
- Splitting the program allows each option to pursue its unique set out of outcomes.
- Splitting the program allows for better assessment of outcomes.
- Increases opportunities for students as many are only interested in one of the two focal points of honors program.
- The inclusion of associates degree students in honors creates the opportunity for delivering honors to students at the community campuses through e-learning.
- The upper division honors option allows easy entry into honors for transfer students and students who have developed academic strength through the first half of their academic career.
- Each option individually and the two jointly achieve the National Collegiate Honors Council’s standard of honors programs contributing at least 20% to a student’s credit hours.
- The expanded offerings in the lower division option creates stronger cohorts, which are highly correlated with student success and retention.
- The lower division option prepares students for high impact learning in undergraduate research, community engagement, and interdisciplinary courses.
- The upper division option has expanded the ways to complete an honors capstone from the current program (community engagement capstone or
thesis capstone). This expansion makes the program compatible with every four year degree offered at UAA.

While the UHCTF is working on a comprehensive set of recommendations for the Provost, we have been given approval to submit the curriculum ahead of the full report.
UHC Task Force  
Curriculum Proposal Approved 1/28/15

University Honors Programs

Option A: Honors in the Liberal Arts

Students are required to take the following courses:

1. Honors designated section of ENGL A111 or ENGL A214
2. HNRS A192
3. Honors designated section of COMM A241
4. HNRS A292
5. Either URS A121 or CEL A292 or CPLX A200

Total Credits 15

Option B: University Scholar

Students are required to take the following courses (3-6 credits):
1. Either URS A121 or CEL A292 or CPLX A200 (this category automatically satisfied if completed for Honors in the Liberal Arts)
2. HNRS A490 or a disciplinary equivalent

And one of the following senior projects (6 credits):
1. HNRS A310 and HNRS A495 or CEL A395 (or disciplinary equivalent)
   or
2. HNRS A499 or disciplinary equivalent (thesis course in major) (6 credits)

Total credits 9-12

For both:
Minimum GPA for good standing 3.0, Grade of B or higher required for all honors course requirements, GPA of 3.5 required to earn honors designation at graduation.
### Program/PREFIX Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Department</th>
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<tbody>
<tr>
<td>HC Honors College</td>
<td></td>
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</table>

#### 2. Complete Program Title/PREFIX
University Honors Program

#### 3. Type of Program
Choose one from the appropriate drop down menu:
- Undergraduate:
- Graduate:
- Other: specify type in box 2

This program is a Gainful Employment Program: □ Yes or ☑ No

#### 4. Type of Action:
- PROGRAM
  - Add
  - Change
  - Delete

- PREFIX
  - Add
  - Change
  - Inactivate

#### 5. Implementation Date (semester/year)
From: 08/2015 To: 09/9999

#### 6a. Coordination with Affected Units
Department, School, or College: CAS, English, JPC
Initiator Name (typed): Eric Murphy
Initiator Signed Initials: _________ Date: ______________

#### 6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 2/13/2015

#### 6c. Coordination with Library Liaison Date: 2/12/2015

#### 7. Title and Program Description - Please attach the following:
- ☑ Cover Memo
- ☑ Catalog Copy in Word using the track changes function. *
  *Copy the text directly from the program website of the online catalog and paste into a Word document.

#### 8. Justification for Action
Program review in 2013 and program prioritization both indicated a need to transform the academic programs in the honors college. This change to the honors core program creates 2 options within the program. The first is a 15 credit lower division course of study that is compatible with all associate and baccalaureate degrees. This option allows for honors to be offered to students in associates programs (including those at community campuses) for the first time. The second option is an upper division offering requiring 12 credits of study including a 6 hour capstone. Having an upper division honors option makes honors accessible for transfer students and students whose skills and interest develop markedly in their academic career. The requirements are in keeping with the best practices prescribed by National Collegiate Honors Council, including class size, number of credit hours, and combination of courses offered through the Honors College and honors sections of disciplinary courses. This core program will expose students to high impact practices through interdisciplinary studies (CPLX 200), community engagement (CEL 292), and undergraduate research (URS 121).
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<tr>
<td>Initiator (faculty only)</td>
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<tr>
<td>Eric Murphy</td>
<td></td>
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<tr>
<td>Initiator (TYPE NAME)</td>
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<td>Dean/Director of School/College</td>
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<td>Provost or Designee</td>
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</table>
The mission of the University Honors College is to be a catalyst for scholarly excellence in undergraduate education. The college advances, coordinates and administers active learning and undergraduate research opportunities for students across the campus. Through its multidisciplinary academic and student support programs, the college serves as a locus for inquiry, discovery, leadership and engagement.

The college houses the Office of Undergraduate Research and Scholarship and three university honors programs: the University Honors Core Program, the Natural and Complex Systems Program, and the Forty-Ninth State Fellows Program. Students enrolled in these programs are also enrolled in the disciplinary school or college in which they complete their degree programs. University Honors students may pursue any major or minor they wish at the university.

All Honors courses have an emphasis on critical thinking and analytical reading, taking on challenging activities through interdisciplinary projects, and preparing students for participating in independent research in their disciplines.

University Honors offers smaller classes with excellent faculty, guided individual and team-based research, personalized academic advising and mentoring, special leadership and internship opportunities, community involvement, and enhanced scholarship prospects. Honors courses will approach the course subject matter with more intensity and rigor than is demanded of typical courses. Students will also participate together in a range of honors activities that are designed to enhance intellectual and personal opportunities. Intensive advising by college faculty and staff is an important element of University Honors, and Honors students are required to meet regularly with advisors.

**Academic Programs**

There are various options that students can select within the University Honors College: the University Honors Program, the Natural and Complex Systems Program, and the Forty-Ninth State Fellows Program. The University Honors Program is split into two options: Option A, Honors in the Liberal Arts is a lower-division set of courses that satisfy University General Education requirements in Written Communication Skills, Oral Communication Skills, Humanities, Social and Natural Sciences. Option B, Honors Scholar, focuses on experiential and interdisciplinary learning, culminating in a senior capstone project. Students can choose to take either option independently or both. Option A accommodates students in Associate programs while Option B accommodates transfer students and students whose interests develop during their academic career at UAA.

Students who complete the requirements of their disciplinary school or college and the program requirements of the University Honors College in good standing will graduate as Honors graduates. Students who complete these requirements with a GPA of 3.50 or above will earn the designation of Honors in the Liberal Arts (Option A) or University Honors Scholar (Option B) University Honors Scholar on their transcripts and diplomas.

The Natural and Complex Systems (NCS) Program includes additional courses that focus on scientific, research-based projects that integrate student work across the natural, physical, engineering,
mathematical and computer sciences. This option is open to honors students in all disciplines but is targeted particularly toward students in science-oriented degrees. Honors students may take courses in the NCS Program if they meet the course prerequisites.

The Forth-Ninth State Fellows Program includes additional curriculum in democratic institutions and leadership. Focusing on politics, history, and Alaska, it consists of selected courses, weekly tutorials and extracurricular activities. Spaces are limited in this intensive program and students typically apply prior to their freshman year to begin the program as they start their studies at UAA.

A limited number of students are admitted to the University Honors Program, the NCS Program and the Forty-Ninth State Fellows Program each year. All baccalaureate degree-seeking students who are motivated to pursue honors-level work are encouraged to apply.

In addition to the University Honors College, many departments at UAA offer departmental honors options. Students may complete both university and departmental honors requirements with dual designations upon graduation, and in some cases departmental honors courses may be substituted for one or more University Honors College requirements. Students pursuing departmental honors and non-honors students may enroll in some University Honors College courses with permission of the University Honors College and on a space-available basis.

**Admission to the University Honors College**

1. Admission to the University Honors College is limited to baccalaureate degree-seeking students. Admission is separate from and in addition to general UAA admission requirements.
2. Students must submit a completed University Honors College application, including supporting documents, to the University Honors College Office (RH 115). Supporting documents include
   a. high school transcripts and SAT or ACT scores for incoming freshmen,
   b. university transcripts and GPA for transfer students, and
   c. an essay on personal goals.
3. In general, students applying to the University Honors College from high school or transferring into the program with previous college-level work must have at least a 3.00 GPA, and show strong evidence of ability to reach and maintain a 3.50 GPA level at UAA within a reasonable time. However, the initial GPA entrance requirement should be interpreted as a general guideline, and not as an absolute criterion; all students who believe that they can succeed and benefit in an honors program are encouraged to apply.

The University Honors College offers two options within the University Honors Program: The Honors in the Liberal Arts option enables two-year-degree-seeking students to earn University Honors. The University Honors Scholar option enables transfer students and UAA students who develop an interest in honors in the course of their baccalaureate degrees to earn University Honors. Note: Students can also elect to earn both Honors in the Liberal Arts and University Honors Scholar awards.

**Honors Program Student Learning Outcomes**
Option A: Honors in the Liberal Arts
The specific educational outcomes that support the program objectives are to produce Honors graduates who are able to demonstrate
• advanced critical and analytical skills.
• effective oral and written communication skills
• knowledge of social science research methods and their application across a variety of disciplines.
• Integration of knowledge and skills across a range of disciplines.

Option B: Honors Scholar
The specific educational outcomes that support the program objectives are to produce Honors graduates who are able to
• conceive and execute independent research or community engagement projects
• integrate multiple disciplines in the implementation of research and praxis

University Honors Scholar

Graduation Requirements

1. Students must meet all General University Requirements, General Education Requirements, school/college requirements, and major requirements as printed in the UAA Catalog.
2. Students must complete the following University Honors Core Curriculum requirements (16 credits) with a grade of B or higher.

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<tr>
<th>A: Honors in the Liberal Arts Option *</th>
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<tr>
<td>HNRS A192 Honors Seminar: Enduring Books</td>
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<td>HNRS A292 Honors Seminar in Social Science</td>
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<tr>
<td>An honors designated section of ENGL A111 or ENGL A214</td>
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<tr>
<td>An honors designated section of COMM A241</td>
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<td>and one of the following courses:</td>
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<tr>
<td>URS A121 Methods of Inquiry</td>
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<tr>
<td>CPLX A200 Introduction to Complexity</td>
<td>3</td>
</tr>
<tr>
<td>CEL A292 Introduction to Civic Engagement</td>
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<td>Total Credits</td>
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*Each course in this option satisfies a GER.

B: University Honors Scholar Option
Select one of the following courses:

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<td>URS A121 Methods of Inquiry</td>
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<tr>
<td>CPLX A200 Introduction to Complexity</td>
<td>3</td>
</tr>
<tr>
<td>CEL A292 Introduction to Civic Engagement</td>
<td>3</td>
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and

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<tr>
<td>HNRS A490 Senior Honors Seminar or disciplinary equivalent</td>
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<td>and one of the following senior capstone projects (6 credits):</td>
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<td>A. HNRS A310 Community Service: Theory and Practice</td>
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and

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<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>CEL A395 Civic Engagement Internship</td>
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<td>or</td>
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<tr>
<td>HNRS A495 Honors Internship</td>
<td>3</td>
</tr>
<tr>
<td>B. HNRS A499 or disciplinary equivalent</td>
<td>6</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
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</table>

3. Students must have earned a cumulative grade point average of 3.50 or higher, as defined under Graduation with Honors.

4. As part of the advising/mentoring process, Honors students’ progress will be evaluated every semester. Students whose performance indicates potential difficulties in meeting the Honors graduation requirements will be counseled on how to correct these difficulties, but if performance improvements do not result, the student may be removed from the college. - See more at: [http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#naturalandcomplexsystemsncsprogramtext](http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#naturalandcomplexsystemsncsprogramtext)

**Natural and Complex Systems (NCS) Program**

The Natural and Complex Systems Program focuses on scientific, research-based projects that integrate student work across the natural, physical, engineering, mathematical and computer sciences. Students admitted to the NCS Program receive the designation “University Honors Scholar: Natural and Complex Systems” on their transcripts upon successful completion of the program requirements.

**Admission to the NCS Program**

The NCS Program is open to students in all disciplines who have been admitted to the University Honors College. Honors students may take courses in the NCS Program if they meet the course prerequisites. Students wanting to enroll in this program should contact the University Honors College office for permission to register.

**Requirements to Graduate as a University Honors Scholar: Natural and Complex Systems**

1. Students must meet all General University Requirements, General Education Requirements, school/college requirements, and major requirements as printed in the UAA catalog.

2. Students must complete the following University Honors program requirements and the NCS Program requirements with a grade of B or higher (19 credits):

3. Program requirements with a grade of C or higher (18 credits):
### Honors Foundation Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS A192</td>
<td>Honors Seminar: Enduring Books*</td>
<td>3</td>
</tr>
<tr>
<td>HNRS A292</td>
<td>Honors Seminar in Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>HNRS A310</td>
<td>Community Service: Theory and Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

### NCS Program Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL/CPLX A200</td>
<td>Introduction to Complexity*</td>
<td>3</td>
</tr>
</tbody>
</table>

### Honors Senior Project // Thesis Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS A490</td>
<td>Senior Honors Seminar (special section designated for NCS Program)*</td>
<td>6</td>
</tr>
</tbody>
</table>

### Total Credits

18

* Indicates courses that satisfy GERs

---

4. Students must have earned a cumulative grade point average of 3.50 or higher, as defined under [Graduation with Honors](http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#naturalandcomplexsystemsncsprogramtext).

5. As part of the advising/mentoring process, Honors students’ progress will be evaluated every semester. Students whose performance indicates potential difficulties in meeting the Honors graduation requirements will be counseled on how to correct these difficulties, but if performance improvements do not result, the student may be removed from the college.

### Forty-Ninth State Fellows Program

Admission to this program is currently suspended. Contact the University Honors College for more information. - See more at: [Forty-Ninth State Fellows Program](http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#fortyninthstatefellowsprogramtext).
UNIVERSITY HONORS COLLEGE

The mission of the University Honors College is to be a catalyst for scholarly excellence in undergraduate education. The college advances, coordinates and administers active learning and undergraduate research opportunities for students across the campus. Through its multidisciplinary academic and student support programs, the college serves as a locus for inquiry, discovery, leadership and engagement.

The college houses the Office of Undergraduate Research and Scholarship and three university honors programs: the University Honors Core Program, the Natural and Complex Systems Program, and the Forty-Ninth State Fellows Program. Students enrolled in these programs are also enrolled in the disciplinary school or college in which they complete their degree programs. University Honors students may pursue any major or minor they wish at the university, and foundation University Honors courses will satisfy General Education Requirements in humanities and social science.

All Honors courses have an emphasis on critical thinking and analytical reading, taking on challenging activities through interdisciplinary projects, and preparing students for participating in independent research in their disciplines.

Students who complete the requirements of their disciplinary school or college and the program requirements of the University Honors College in good standing will graduate as Honors graduates. Students who complete these requirements with a GPA of 3.50 or above will earn the designation of University Honors Scholar on their transcripts and diplomas.

University Honors offers smaller classes with excellent faculty, guided individual and team-based research, personalized academic advising and mentoring, special leadership and internship opportunities, community involvement, and enhanced scholarship prospects. Honors courses will approach the course subject matter with more intensity and rigor than is demanded of typical courses. Students will also participate together in a range of honors activities that are designed to enhance intellectual and personal opportunities. Intensive advising by college faculty and staff is an important element of University Honors, and Honors students are required to meet regularly with advisors.

Academic Programs

There are various options that students can select within the University Honors College: the University Honors Core Program, the Natural and Complex Systems Program, and the Forty-Ninth State Fellows Program. The University Honors Core Program is split into two options: Option A, Honors in the Liberal Arts is a lower-division set of courses that satisfy University General Education requirements in Written Communication Skills, Oral Communication Skills, Humanities, Social and Natural Sciences. Option B, Honors Scholar, focuses on experiential and interdisciplinary learning, culminating in a senior capstone project. Students can choose to take either option independently or both. Option A accommodates students in Associate programs while Option B accommodates transfer students and students whose interests develop during their academic career at UAA. requirements, taken by all Honors students, include courses in humanities, social sciences and community service. All Honors courses have an emphasis on critical thinking and analytical reading, taking on challenging activities through interdisciplinary projects, and preparing students for participating in independent research in their disciplines.
Students who complete the requirements of their disciplinary school or college and the program requirements of the University Honors College in good standing will graduate as Honors graduates. Students who complete these requirements with a GPA of 3.50 or above will earn the designation of Honors in the Liberal Arts (Option A) or University Honors Scholar (Option B) University Honors Scholar on their transcripts and diplomas.

The Natural and Complex Systems (NCS) Program includes additional courses that focus on scientific, research-based projects that integrate student work across the natural, physical, engineering, mathematical and computer sciences. This option is open to honors students in all disciplines but is targeted particularly toward students in science-oriented degrees. Honors students may take courses in the NCS Program if they meet the course prerequisites.

The Forth-Ninth State Fellows Program includes additional curriculum in democratic institutions and leadership. Focusing on politics, history, and Alaska, it consists of selected courses, weekly tutorials and extracurricular activities. Spaces are limited in this intensive program and students typically apply prior to their freshman year to begin the program as they start their studies at UAA.

A limited number of students are admitted to the University Honors Core Program, the NCS Program and the Forty-Ninth State Fellows Program each year. All baccalaureate degree-seeking students who are motivated to pursue honors-level work are encouraged to apply.

In addition to the University Honors College, many departments at UAA offer departmental honors options. Students may complete both university and departmental honors requirements with dual designations upon graduation, and in some cases departmental honors courses may be substituted for one or more University Honors College requirements. Students pursuing departmental honors and non-honors students may enroll in some University Honors College courses with permission of the University Honors College and on a space-available basis.

Admission to the University Honors College

1. Admission to the University Honors College is limited to baccalaureate degree-seeking students. Admission is separate from the University Honors Core Program, the NCS Program and the Forty-Ninth State Fellows Program each year. All baccalaureate degree-seeking students who are motivated to pursue honors-level work are encouraged to apply.

2. Students must submit a completed University Honors College application, including supporting documents, to the University Honors College Office (RH 115). Supporting documents include:
   a. high school transcripts and SAT or ACT scores for incoming freshmen,
   b. university transcripts and GPA for transfer students, and
   c. an essay on personal goals.
   d. and a completed reference form from two previous teachers (either high school or college).

   Application packets may be obtained from the University Honors College office.

3. In general, students applying to the University Honors College from high school or transferring into the program with previous college-level work must have at least a 3.00 GPA, and show strong
evidence of ability to reach and maintain a 3.50 GPA level at UAA within a reasonable time. However, the initial GPA entrance requirement should be interpreted as a general guideline, and not as an absolute criterion; all students who believe that they can succeed and benefit in an honors program are encouraged to apply.

**Admission to the University Honors College will be determined by the Honors College Admission Committee.** Admission is based on an overall evaluation of the student’s probability of success in the college, and not on any single criterion or formula. The committee may ask the applicant for additional information and/or suggest an interview. Applicants will be ranked and are admitted on a space-available basis. In some cases the committee may initially grant conditional admission, which will be changed to formal admission if the student demonstrates ability to do honors work.

The University Honors College offers two options within the University Honors Program: The Honors in the Liberal Arts option enables two-year-degree-seeking students to earn University Honors. The University Honors Scholar option enables transfer students and UAA students who develop an interest in honors in the course of their baccalaureate degrees to earn University Honors. Note: Students can also elect to earn both Honors in the Liberal Arts and University Honors Scholar awards.

### Honors Program Student Learning Outcomes

**Option A: Honors in the Liberal Arts**
The specific educational outcomes that support the program objectives are to produce Honors graduates who are able to demonstrate

- advanced critical and analytical skills.
- effective oral and written communication skills
- knowledge of social science research methods and their application across a variety of disciplines.
- integration of knowledge and skills across a range of disciplines.

**Option B: Honors Scholar**
The specific educational outcomes that support the program objectives are to produce Honors graduates who are able to

- conceive and execute independent research or community engagement projects
- integrate multiple disciplines in the implementation of research and praxis

### University Honors Scholar

**Graduation Requirements**

1. Students must meet all General University Requirements, General Education Requirements, school/college requirements, and major requirements as printed in the UAA Catalog.
2. Students must complete the following University Honors Core Curriculum requirements (16 credits) with a grade of B or higher.

<table>
<thead>
<tr>
<th>A: Honors in the Liberal Arts Option *</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS A192 Honors Seminar: Enduring Books</td>
<td>3</td>
</tr>
<tr>
<td>HNRS A292 Honors Seminar in Social Science</td>
<td>3</td>
</tr>
<tr>
<td>An honors designated section of ENGL A111 or ENGL A214</td>
<td>3</td>
</tr>
<tr>
<td>An honors designated section of COMM A241</td>
<td>3</td>
</tr>
<tr>
<td>and one of the following courses:</td>
<td></td>
</tr>
<tr>
<td>URS A121 Methods of Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>CPLX A200 Introduction to Complexity</td>
<td>3</td>
</tr>
<tr>
<td>CEL A292 Introduction to Civic Engagement</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
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*Each course in this option satisfies a GER.

<table>
<thead>
<tr>
<th>B: University Honors Scholar Option</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following courses:</td>
<td></td>
</tr>
<tr>
<td>URS A121 Methods of Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>CPLX A200 Introduction to Complexity</td>
<td>3</td>
</tr>
<tr>
<td>CEL A292 Introduction to Civic Engagement</td>
<td>3</td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>HNRS A490 Senior Honors Seminar or disciplinary equivalent</td>
<td>3</td>
</tr>
<tr>
<td>and one of the following senior capstone projects (6 credits):</td>
<td></td>
</tr>
<tr>
<td>A. HNRS A310 Community Service: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>CEL A395 Civic Engagement Internship</td>
<td>3</td>
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<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>HNRS A495 Honors Internship</td>
<td>3</td>
</tr>
<tr>
<td>B. HNRS A499 or disciplinary equivalent</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

A grade of C or higher:

<table>
<thead>
<tr>
<th>Honors Foundation Courses (Honors Core)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HNRS A192 Honors Seminar: Enduring Books</td>
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</tr>
<tr>
<td>HNRS A310 Community Service: Theory and Practice</td>
<td>3</td>
</tr>
<tr>
<td>Honors Senior Project/Thesis Requirements (Honors Core)</td>
<td></td>
</tr>
<tr>
<td>HNRS A392 Honors Thesis Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>
Select one of the following:

HNRS A490  Senior Honors Seminar (6 credits over two semesters).

A course proposed by the student and approved by the Honors College dean (3 credits minimum; may be an existing course or independent study) plus senior thesis or project (2 credits minimum; either departmental thesis/project, or HNRS A499 Honors Thesis)

An upper division course listed in the catalog as a specific departmental honors requirement (3 credits minimum) and Senior thesis or project (2 credits minimum; either departmental thesis/project, or HNRS A499 Honors Thesis)

Six-credit thesis/project (either departmental thesis/project, and/or HNRS A499 Honors Thesis).

Total Credits 16

1  Indicates courses that satisfy GERs

2  Total University Honors Program credits required (9 core + 7 upper division): 16

3  Students must have earned a cumulative grade point average of 3.50 or higher, as defined under Graduation with Honors.

4  As part of the advising/mentoring process, Honors students’ progress will be evaluated every semester. Students whose performance indicates potential difficulties in meeting the Honors graduation requirements will be counseled on how to correct these difficulties, but if performance improvements do not result, the student may be removed from the college. - See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#naturalandcomplexsystemsncsprogram

Natural and Complex Systems (NCS) Program

The Natural and Complex Systems Program focuses on scientific, research-based projects that integrate student work across the natural, physical, engineering, mathematical and computer sciences. Students admitted to the NCS Program receive the designation “University Honors Scholar: Natural and Complex Systems” on their transcripts upon successful completion of the program requirements.

Admission to the NCS Program

The NCS Program is open to students in all disciplines who have been admitted to the University Honors College. Honors students may take courses in the NCS Program if they meet the course prerequisites. Students wanting to enroll in this program should contact the University Honors College office for permission to register.

Requirements to Graduate as a University Honors Scholar: Natural and Complex Systems

1. Students must meet all General University Requirements, General Education Requirements, school/college requirements, and major requirements as printed in the UAA catalog.
2. Students must complete the following University Honors Core program requirements and the NCS Program requirements with a grade of BC or higher (19 credits):

3. Program requirements with a grade of C or higher (18 credits):

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<th><strong>Honors Senior Project // Thesis Requirements</strong></th>
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</thead>
<tbody>
<tr>
<td>HNRS A490  Senior Honors Seminar (special section designated for NCS Program)</td>
<td>6</td>
</tr>
</tbody>
</table>

* Indicates courses that satisfy GERs

**Total Credits**: 18

4. Students must have earned a cumulative grade point average of 3.50 or higher, as defined under Graduation with Honors.
As part of the advising/mentoring process, Honors students’ progress will be evaluated every semester. Students whose performance indicates potential difficulties in meeting the Honors graduation requirements will be counseled on how to correct these difficulties, but if performance improvements do not result, the student may be removed from the college.

4. Forty-Ninth State Fellows Program

Admission to this program is currently suspended. Contact the University Honors College for more information. - See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#fortyninthstatefellowsprogramtext

See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#naturalandcomplexsystemsncsprogramtext

- See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/uhc/#text
Course Action Request

University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College
   AS CAS

1b. Division
   AMSC Division of Math Science

1c. Department
   Mathematics & Statistics

2. Course Prefix
   MATH

3. Course Number
   A105

4. Previous Course Prefix & Number

5. Credits/CEUs
   3

5b. Contact Hours
   (Lecture + Lab) (3+0)

6. Complete Course Title
   Intermediate Algebra

Abbreviated Title for Transcript (30 character)

7. Type of Course
   Academic ☒ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action:
   Add ☒ Change ☐ Delete ☐

If a change, mark appropriate boxes:

- Prefix ☐ Credits ☐ Course Number
- Title ☐ Contact Hours ☐ Repeat Status
- Grading Basis ☐ Cross-Listed/Stacked ☐
- Course Description ☐ Course Prerequisites ☐
- Test Score Prerequisites ☐ Co-requisites ☐
- Automatic Restrictions ☐ Registration Restrictions ☐
- Class ☐ Level ☐ Major ☐ College ☐
- Other (please specify) ☐

9. Repeat Status No
   # of Repeats ☐ Max Credits ☑

10. Grading Basis
    A-F ☒ P/NP ☐ NG ☐

11. Implementation Date
    From: Fall/2015 To: /9999

12. ☐ Cross Listed with
    ☐ Stacked with

13. Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): Mark Fitch
Initiator Signed Initials: ________ Date: __________

13b. Coordination Email
    Date: 1/21/15
    Submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
    Date: 1/21/15

14. General Education Requirement
    Mark appropriate box:
    Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities ☐
    Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Topics include expressions, equations and applications involving linear, quadratic, rational and radical functions; graphs of linear and quadratic functions; functions and their inverses; introduction to exponential and logarithmic functions; and systems of linear equations.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
    MATH A55 with a minimum grade of C or MATH A060 with a minimum grade of C

16b. Co-requisite(s) (concurrent enrollment required)

16c. Automatic Restriction(s)
    ☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) (non-codable)
If the prerequisite is not satisfied, an approved UAA placement test is required.

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
    BOR resolution

Initiator (faculty only) Date
☑ Approved ☐ Disapproved

Initiator (TYPE NAME)
☐ Approved ☐ Disapproved

Dean/Director of School/College Date
☑ Approved ☐ Disapproved

Undergraduate/Graduate Academic Board Chair Date
☑ Approved ☐ Disapproved

Provost or Designee Date
☑ Approved ☐ Disapproved
University of Alaska Anchorage  
College of Arts and Sciences  
Course Content Guide

I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: College of Arts and Sciences
B. Course Prefix: MATH
C. Course Number: A105
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Intermediate Algebra
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: Topics include expressions, equations and applications involving linear, quadratic, rational and radical functions; graphs of linear and quadratic functions; functions and their inverses; introduction to exponential and logarithmic functions; and systems of linear equations.
K. Course Prerequisites: MATH A055 with a minimum grade of C or MATH A060 with a minimum grade of C
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: If the prerequisite is not satisfied, an approved UAA placement test is required.
O. Course Fees: Yes

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals. The instructor will:
   1. Use appropriate mathematical language and symbols to develop and communicate solutions
   2. Demonstrate quantitative and analytical techniques
B. Student Learning Outcomes. Students will be able to:
   1. Combine, compose, evaluate and graph functions and inverse functions
   2. Demonstrate graphical competency for linear, quadratic, absolute value, rational and square root functions
   3. Graph and interpret exponential and logarithmic functions
   4. Solve applied problems using appropriate algebraic techniques

IV. Guidelines for evaluation
Assessment may be based on homework assignments, quizzes, tests, and a midterm examination. A comprehensive final exam will be given.

V. Course Level Justification
The course is a prerequisite for General Education Quantitative Skills courses at UAA. It is required for the Associate of Arts degree, and is also required for many certificate and
VI. Topical Course Outline

1.0 Simplification and Solving
   1.1 Absolute value in graphing, equations, and inequalities
   1.2 Solving systems of linear equations
   1.3 Solving systems of linear inequalities (optional)
   1.4 Review of factoring techniques
   1.5 Simplifying rational expressions and solving equations with rational expressions

2.0 Radicals
   2.1 Radical expressions and applications of radicals
   2.2 Rational exponents
   2.3 Evaluating and simplifying radical expressions
   2.4 Adding and subtracting radical expressions
   2.5 Multiplying and dividing radical expressions including use of the conjugate
   2.6 Solving equations with radical expressions
   2.7 Arithmetic with complex numbers

3.0 Graphing
   3.1 Review of the rectangular coordinate system
   3.2 Review of equations and graphing of lines
   3.3 Graphing non-linear equations by plotting points
   3.4 Graphing by transformations including translation, reflection, and scaling

4.0 Quadratics
   4.1 Solving quadratic equations using factoring
   4.2 Solving quadratic equations using the quadratic formula
   4.3 Solving equations in a quadratic form
   4.4 Completing the square to graph parabolas and circles
   4.5 Graphing circles and more parabolas
   4.6 Quadratic inequalities

5.0 Functions
   5.1 Function definition and notation
   5.2 Algebra and composition of functions
   5.3 Inverse functions

6.0 Logarithms and Exponentials
   6.1 Exponential functions including base e
   6.2 Logarithmic functions including base e

7.0 Applications
   7.1 Proportions
   7.2 Interest problems
7.3 Geometry problems
7.4 Distance problems

VI. Suggested Texts


VII. Bibliography


<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AAS, Accounting</td>
<td>1/21/2015</td>
<td>Pat Fort</td>
</tr>
<tr>
<td>2. AAS, Air Traffic Control</td>
<td>1/21/2015</td>
<td>Rocky Capozzi</td>
</tr>
<tr>
<td>3. AAS, Apprenticeship Technologies</td>
<td>1/21/2015</td>
<td>Sally Spieker</td>
</tr>
<tr>
<td>4. AAS, Architectural &amp; Engineering Technology</td>
<td>1/21/2015</td>
<td>Donald Ketner</td>
</tr>
<tr>
<td>5. AAS, Aviation Administration</td>
<td>1/21/2015</td>
<td>Rocky Capozzi</td>
</tr>
<tr>
<td>6. AAS, Aviation Maintenance Technology</td>
<td>1/21/2015</td>
<td>Rocky Capozzi</td>
</tr>
<tr>
<td>7. AAS, Computer Electronics</td>
<td>1/21/2015</td>
<td>Allen Houtz</td>
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<tr>
<td>8. AAS, Computer Systems Technology</td>
<td>1/21/2015</td>
<td>Harry Banks</td>
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<tr>
<td>9. AAS, Diagnostic Medical Sonography</td>
<td>1/21/2015</td>
<td>Ryan Parnell</td>
</tr>
<tr>
<td>10. AAS, Early Childhood Development</td>
<td>1/21/2015</td>
<td>Hilary Seitz</td>
</tr>
<tr>
<td>11. AAS, Fire &amp; Emergency Services Technology</td>
<td>1/21/2015</td>
<td>Jim Foster</td>
</tr>
<tr>
<td>12. AAS, General Business</td>
<td>1/21/2015</td>
<td>Ray Zagorski</td>
</tr>
<tr>
<td>13. AAS, Industrial Process Instrumentation</td>
<td>1/21/2015</td>
<td>Allen Houtz</td>
</tr>
<tr>
<td>14. AAS, Occupational Safety &amp; Health</td>
<td>1/21/2015</td>
<td>Lynda Kreps</td>
</tr>
<tr>
<td>15. AAS, Paramedical Technology</td>
<td>1/21/2015</td>
<td>Paul Perry/Kathy Griffin</td>
</tr>
<tr>
<td>16. AAS, Process Technology</td>
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<td>Allen Houtz</td>
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<tr>
<td>17. AAS, Professional Piloting</td>
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<td>18. AAS, Radiologic Technology</td>
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<td>20. AAS, Technology</td>
<td>1/21/2015</td>
<td>Heather Corriere</td>
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<td>22. Associate of Arts</td>
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<td>☐ CEU</td>
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| 8. Type of Action: | ☑ Add | ☑ Change | ☑ Delete |

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☑ Course Number
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Cross-Listed/Stacked
- ☑ Course Prerequisites
- ☑ Co-requisites
- ☑ Registration Restrictions
- ☑ General Education Requirement
- ☐ Class
- ☐ Level
- ☐ College
- ☐ Major
- ☐ Other

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Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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Initiator Name (typed): ___________  Initiator Signed Initials: ___________  Date: ___________

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<th>13b. Coordination Email</th>
<th>Date: 02/18/15</th>
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<td>(<a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a>)</td>
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13c. Coordination with Library Liaison  Date: 02/18/15

14. General Education Requirement

Mark appropriate box:

- ☐ Oral Communication
- ☐ Written Communication
- ☐ Quantitative Skills
- ☐ Humanities
- ☐ Fine Arts
- ☐ Social Sciences
- ☐ Natural Sciences
- ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)

Introduces concepts of discrete mathematics including relations and graph theory along with prerequisite topics including sets, logic, and mathematical proof.

16a. Course Prerequisite(s) (list prefix and number or test code and score)

MATH A151 with minimum grade of C

16b. Co-requisite(s) (concurrent enrollment required)

16c. Automatic Restriction(s)

- ☐ College
- ☐ Major
- ☐ Class
- ☐ Level

16d. Registration Restriction(s) (non-codable)

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action

Periodic update of curriculum

Initiator (faculty only)

Date: ___________

Approved: [ ]  Disapproved: [ ]

Dean/Director of School/College

Date: ___________

Initiator (TYPE NAME)

[ ] Approved  [ ] Disapproved

[ ] Approved  [ ] Disapproved

[ ] Approved  [ ] Disapproved

[ ] Approved  [ ] Disapproved

[ ] Approved  [ ] Disapproved

[ ] Approved  [ ] Disapproved

Undergraduate/Graduate Academic Board Chair

Date: ___________

Provost or Designee

Date: ___________
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: College of Arts and Sciences
B. Course Prefix: MATH
C. Course Number: A261
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Introduction to Discrete Mathematics
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: Introduces concepts of discrete mathematics including relations and graph theory along with prerequisite topics including sets, logic, and mathematical proof.
K. Course Prerequisites: MATH A151 with a minimum grade of C
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: N/A
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals. The instructor will:
   1. Emphasize the importance of logic and support for statements in problem solving.
   2. Present material in sets, logic, proof, relations, and graph theory.
   3. Present applications of discrete mathematics in computer science and computer systems engineering.
B. Student Learning Outcomes. The students will
   1. Be able to read and understand definitions, statements of theorems, and simple proofs
   2. Be able to identify and use appropriate models for discrete phenomena
   3. Be able to identify properties of graphs, evaluate simple counts, and identify properties of relations

IV. Course Level Justification
This course requires skills in interpreting mathematics taught in freshman level courses. This course is similar to discrete mathematics courses taught nationwide at the sophomore level.

V. Topical Course Outline
A. Logic
   a) Logical connectives
   b) Quantifiers
c) Boolean algebra

B. Sets
a) Types of sets
b) Operations including union, intersection, power sets, Cartesian products, and complement
c) Applications such as indexing, hashes, strings, and lists

C. Mathematical Proof
a) Direct
b) Contradiction
c) Mathematical Induction

D. Relations
a) Relation properties including inheritance and closure
b) Equivalence relations
c) Partially ordered sets
d) Examples including mod

E. Functions
a) Definition
b) Properties including one-to-one and onto
c) Examples such as floor and recursively defined

F. Graph Theory
a) Graph properties
b) Isomorphism
c) Trees

G. Enumeration
a) Permutations and combinations
b) Inclusion/exclusion
c) Recurrence relations
d) Applications such as complexity and probability

VI. Suggested Texts

VII. Bibliography

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College
   AS CAS

1b. Division
   AMSC Division of Math Science

1c. Department
   Mathematics & Statistics

2. Course Prefix
   MATH

3. Course Number
   A309

4. Previous Course Prefix & Number
   

5a. Credits/CEUs
   3

5b. Contact Hours
   (Lecture + Lab)
   (3+0)

6. Complete Course Title
   Introduction to Number Theory

   Abbreviated Title for Transcript (30 character)

7. Type of Course
   ✔ Academic
   ☐ Preparatory/Development
   ☐ Non-credit
   ☐ CEU
   ☐ Professional Development

8. Type of Action:
   ✔ Add
   ☐ Change
   ☐ Delete

   If a change, mark appropriate boxes:
   ☐ Prefix
   ☐ Credits
   ☐ Title
   ☐ Grading Basis
   ☐ Course Description
   ☐ Test Score Prerequisites
   ☐ Automatic Restrictions
   ☐ Class
   ☐ Level
   ☐ College
   ☐ Major
   ☐ Other
   (please specify)

9. Repeat Status No
   # of Repeats
   Max Credits

10. Grading Basis
    ✔ A-F
    ☐ P/NP
    ☐ NG

11. Implementation Date
    semester/year
    From: Fall/2015
    To: /9999

12. ☐ Cross Listed
    with
    ☐ Stacked
    with
    Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

   Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
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<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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Initiator Name (typed): Mark Fitch
Initiator Signed Initials: __________ Date: __________________

13b. Coordination Email
    Date: 02/18/15
    submitted to Faculty Listserv: (uas-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
    Date: 02/18/15

14. General Education Requirement
    Mark appropriate box:
    ☐ Oral Communication
    ☐ Written Communication
    ☐ Quantitative Skills
    ☐ Humanities
    ☐ Fine Arts
    ☐ Social Sciences
    ☐ Natural Sciences
    ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)

   Examines fundamental concepts of number theory including primes, divisibility, congruences, quadratic reciprocity, number theoretic functions, continued fractions, and Diophantine equations.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
     MATH A265 with a minimum grade of C

16b. Co-requisite(s) (concurrent enrollment required)

16c. Automatic Restriction(s)
     ☐ College
     ☐ Major
     ☐ Class
     ☐ Level

16d. Registration Restriction(s) (non-cordable)

17. ☐ Mark if course has fees
18. ☐ Mark if course is a selected topic course

19. Justification for Action

   Adds a nationally standard course that will fulfill a current requirement

   __________________________________________________________
   __________
   Initator (faculty only)
   Mark Fitch
   Initiator (TYPE NAME)

   ☐ Approved
   ☐ Disapproved
   Dean/Director of School/College
   Date

   ☐ Approved
   ☐ Disapproved
   Undergraduate/Graduate Academic
   Date

   ☐ Approved
   ☐ Disapproved
   Board Chair
   Date

   ☐ Approved
   ☐ Disapproved
   Provost or Designee
   Date
University of Alaska Anchorage  
College of Arts and Sciences  
Course Content Guide

I. Date of Initiation: Spring 2015

II. Curriculum Action Request
A. College: College of Arts and Sciences  
B. Course Prefix: MATH  
C. Course Number: A309  
D. Number of Credits: 3  
E. Contact Hours: 3+0  
F. Course Title: Introduction to Number Theory  
G. Grading Basis: A-F  
H. Implementation Date: Fall 2015  
I. Cross-listed/Stacked: N/A  
J. Course Description: Examines fundamental concepts of number theory including primes, divisibility, congruences, quadratic reciprocity, number theoretic functions, continued fractions, and Diophantine equations.  
K. Course Prerequisites: MATH A265 with a minimum grade of C  
L. Course Co-requisites: N/A  
M. Other Restrictions: N/A  
N. Registration Restrictions: N/A  
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals. The instructor will:  
   1. Introduce students to the concepts of divisibility and primes, Diophantine equations, congruence, quadratic reciprocity, and continued fractions  
   2. Present proofs of classical theorems in number theory  
   3. Provide problems for students to apply these concepts  
B. Student Learning Outcomes. Students will be able to:  
   1. Solve linear and quadratic Diophantine equations  
   2. Calculate values of basic number theory functions  
   3. Prove basic number theoretic theorems and corollaries

IV. Guidelines for Evaluation  
Assessment may be based on homework assignments, quizzes, tests, papers, and in-class presentations.

V. Course Level Justification  
Requires the ability to understand, create and write proofs using the methods, notation and vocabulary of upper-division mathematics.

VI. Topical Course Outline
1.0 Review of Divisibility Theory in the Integers  
   1.1 The Division Algorithm  
   1.2 Greatest Common Divisor and the Euclidean Algorithm

2.0 Components of Number Theory  
   2.1 Historical Motivation  
      2.1.1 Famous problems: Goldbach Conjecture, distribution of primes, etc.  
      2.1.2 Mersenne primes, perfect and amicable numbers
2.2 Theory of Congruences
   2.2.1 Definition and basic properties
   2.2.2 Binary and decimal representations of integers
   2.2.3 Linear congruences and systems of linear congruences (Chinese Remainder Theorem)
   2.2.4 Fermat’s and Wilson’s theorems

2.3 Number Theoretic Functions
   2.3.1 Definitions
   2.3.2 Properties
   2.3.3 Mobius Inversion Formula

2.4 Primitive Roots and Indices
   2.4.1 Order of an integer modulo n
   2.4.2 Primitive roots
      2.4.2.1 Primitive roots for primes
      2.4.2.2 Primitive roots for composites

2.5 Quadratic Reciprocity
   2.5.1 The Legendre Symbol
   2.5.2 Quadratic residues
   2.5.3 Quadratic reciprocity

2.6 Continued Fractions
   2.6.1 Finite continued fractions
   2.6.2 Infinite continued fractions

VII. Suggested Texts


VIII. Bibliography


*Classic text*
1a. School or College
AS CAS

1b. Division
AMSC Division of Math Science

1c. Department
Mathematics & Statistics

2. Course Prefix
MATH

3. Course Number
A424

4. Previous Course Prefix & Number

5a. Credits/CEUs
3

5b. Contact Hours
(Lecture + Lab)
(3+0)

6. Complete Course Title
Advanced Engineering Mathematics: Linear Algebra & Numerical Analysis
Adv Eng Math A

Abbreviated Title for Transcript (30 character)

7. Type of Course
☒ Academic
☐ Preparatory/Development
☐ Non-credit
☐ CEU
☐ Professional Development

8. Type of Action:
☒ Add
☐ Change
☐ Delete

If a change, mark appropriate boxes:

☐ Prefix
☐ Credits
☐ Course Number
☐ Title
☐ Repeat Status
☐ Grading Basis
☐ Cross-Listed/Stacked
☐ Course Description
☐ Co-requisites
☐ Test Score Prerequisites
☐ Registration Restrictions
☐ Automatic Restrictions
☐ General Education Requirement
☐ Class
☐ Level
☐ College
☐ Major
☐ Other (please specify)

9. Repeat Status No

# of Repeats

Max Credits

10. Grading Basis
☒ A-F
☐ P/NP
☐ NG

11. Implementation Date

From: Fall/2015
To: /9999

12. ☐ Cross Listed with

☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
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Initiator Name (typed): Mark Fitch
Initiator Signed Initials: _________
Date: __________

13b. Coordination Email
Date: 02/18/15
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
Date: 02/18/15

14. General Education Requirement

Mark appropriate box:
☐ Oral Communication
☐ Written Communication
☐ Quantitative Skills
☐ Humanities
☐ Fine Arts
☐ Social Sciences
☐ Natural Sciences
☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Emphasizes mathematics used in engineering. Includes applications of matrices, vector spaces, inner products, and linear transformations; numerical interpolation, approximation, and differentiation; finite difference methods for ordinary and partial differential equations; numerical stability.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
MATH A302 with a minimum grade of C and PHYS A211 with a minimum grade of C

16b. Co-requisite(s) (concurrent enrollment required)

16c. Automatic Restriction(s)
☐ College
☐ Major
☐ Class
☐ Level

16d. Registration Restriction(s) (non-codable)
Completion of a programming course with a minimum grade of C

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Increased demand from engineering students

Initiator (faculty only)
Mark Fitch
Initiator Name (please specify)

Approved
Disapproved

Dean/Director of School/College
Date

Undergraduate/Graduate Academic
Board Chair
Date

Provost or Designee
Date
I. **Date of Initiation:** Spring 2015

II. **Curriculum Action Request**
   A. **College:** College of Arts and Sciences
   B. **Course Prefix:** MATH
   C. **Course Number:** A424
   D. **Number of Credits:** 3
   E. **Contact Hours:** 3+0
   F. **Course Title:** Advanced Engineering Mathematics: Linear Algebra & Numerical Analysis
   G. **Grading Basis:** A-F
   H. **Implementation Date:** Fall 2015
   I. **Cross-listed/Stacked:** N/A
   J. **Course Description:** Emphasizes mathematics used in engineering. Includes applications of matrices, vector spaces, inner products, and linear transformations; numerical interpolation, approximation, and differentiation; finite difference methods for ordinary and partial differential equations; numerical stability.
   K. **Course Prerequisites:** MATH A302 with a minimum grade of C and PHYS A211 with a minimum grade of C
   L. **Course Co-requisites:** N/A
   M. **Other Restrictions:** N/A
   N. **Registration Restrictions:** Completion of a programming course with a minimum grade of C
   O. **Course Fees:** No

III. **Instructional Goals and Student Learning Outcomes**
   A. **Instructional Goals.** The instructor will:
      1. Demonstrate advanced mathematics used to analyze and design engineering systems
      2. Develop for students the fundamental concepts of linear algebra
      3. Acquaint students with various numerical techniques for approximating the solutions of linear algebraic systems, and of ordinary and partial differential equations that are commonly encountered by engineers and scientists
      4. Enable students to use the above noted mathematical techniques in ways applicable to engineering and scientific research and analyses
   B. **Student Learning Outcomes.** Students will be able to:
      1. Apply linear algebra to engineering systems, including the approximation of solutions
      2. Apply numerical methods against ordinary and partial differential equations typically encountered in engineering and the sciences
   C. **Assessment Measures.** Students will:
      1. Demonstrate understanding of course material via homework, examinations, and projects

IV. **Course Level Justification**
   This course is designed to enable engineering students to solve problems common to research and professional engineering practice using advanced mathematics which requires MATH A302.

V. **Topical Course Outline**
   1. Matrices
1.1 Matrices and their Properties
1.2 Systems of Linear Equations
1.3 Determinants
1.4 Eigenvalues, Diagonalization, Matrix Powers

2. Vector Spaces
2.1 Definition and Examples
2.2 Linear Transformations
2.3 Inner Products and Norms
2.4 Orthogonality and Expansions
2.5 Modeling of Physical Systems

3. Introduction to Numerical Methods
3.1 Sources of Numerical Error; Order of Convergence
3.2 Numerical Interpolation and Approximation
3.3 Numerical Differentiation and Integration
3.4 Numerical Solution of Matrix Systems; Approximation of Eigenvalues

4. Finite Difference Methods
4.1 Ordinary Differential Equations
   i. Explicit Methods with a Focus on Runge-Kutta-Fehlberg
   ii. Implicit Methods with Foci on Techniques used within 4.2.iii below
   iii. Stability and Error Control
4.2 Partial Differential Equations
   i. Development of the Heat, Potential, and Wave Equations
   ii. Common Boundary Conditions
   iii. Elementary Explicit and Implicit Methods
   iv. Stability Properties

VI. Suggested Texts


VII. Biography

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

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<tr>
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15. Course Description (suggested length 20 to 50 words)

Emphasizes mathematics used in engineering. Includes Fourier series and transforms, Bessel functions, Legendre polynomials, linear partial differential equations, and complex variables. Develops the wave, heat and potential equations via first principles. Introduces the method of characteristics as applied to shock phenomena.

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17. Mark if course has fees

18. Mark if course is a selected topic course

19. Justification for Action

Increased demand from engineering students

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38
I. Date of Initiation: Fall 2015

II. Curriculum Action Request
A. College: College of Arts and Sciences
B. Course Prefix: MATH
C. Course Number: A425
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Advanced Engineering Mathematics: Partial Differential Equations and Complex Variables
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: Emphasizes mathematics used in engineering. Includes Fourier series and transforms, Bessel functions, Legendre polynomials, linear partial differential equations, and complex variables. Develops the wave, heat and potential equations via first principles. Introduces the method of characteristics as applied to shock phenomena.
K. Course Prerequisites: MATH A302 with a minimum grade of C and PHYS A211 with a minimum grade of C
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: Completion of a programming course with a minimum grade of C
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals. The instructor will:
   1. Demonstrate advanced mathematics used to analyze and design engineering systems
   2. Acquaint students with Fourier series and transforms, Bessel functions, and Legendre polynomials, and the method of separation of variables as applied to the wave, heat, and potential equations in the presence of commonly used boundary conditions. Demonstrate the method of characteristics and its application to simple shock phenomena
   3. Acquaint students with complex numbers, functions, series, integration, conformal maps, and their application to problems commonly encountered in two dimensional fluid mechanics and heat transfer
   4. Enable students to use the above noted mathematical techniques in ways applicable to engineering and scientific research and analyses
B. Student Learning Outcomes. Students will be able to:
   1. Solve linear partial differential equations common to engineering systems within Cartesian, circular, and spherical domains
   2. Apply the techniques of complex variables to solve two dimensional fluid mechanics and heat transfer problems
C. Assessment Measures. Students will:
   1. Demonstrate understanding of course material via homework, examinations, and projects

IV. Course Level Justification
This course is designed to enable engineering students to solve problems common to research and professional engineering practice using advanced mathematics which requires MATH A302.
V. Topical Course Outline

1. Orthogonal Expansions and Transforms
   1.1 Fourier Series and Transform
   1.2 Bessel Functions
   1.3 Legendre Polynomials

2. Partial Differential Equations
   2.1 Introduction to the Wave, Heat, and Potential Equations
   2.2 Introduction to Boundary Conditions
   2.3 Separation of Variables Methodology
   2.4 Introduction to Shock Phenomena and the Method of Characteristics

3. Complex Analysis
   3.1 Geometry and Arithmetic of Complex Numbers
   3.2 Complex Functions and Series
   3.3 Complex Integration
   3.4 Conformal Mappings
   3.5 Two Dimensional Fluid Mechanics and Heat Transfer Problems

VI. Suggested Texts


VII. Biography


## Course Action Request
### University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

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<th>5b. Contact Hours (Lecture + Lab)</th>
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If a change, mark appropriate boxes:
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- Credits
- Title
- Grading Basis
- Cross-Listed/Stacked
- Course Description
- Course Prerequisites
- Test Score Prerequisites
- Co-requisites
- Automatic Restrictions
- Level
- College
- Major
- Other CCG (please specify)

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Initiator (faculty only) Mark Fitch

Initiator Signed Initials: __________ Date: __________

13b. Coordination Email: [faculty@lists.uaa.alaska.edu](mailto:faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison: [library@lists.uaa.alaska.edu](mailto:library@lists.uaa.alaska.edu)

Initiator (TYPE NAME) Mark Fitch

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Undergraduate/Graduate Academic

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Board Chair

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Provost or Designee

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<tr>
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</tbody>
</table>
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: College of Arts and Sciences
B. Course Prefix: MATH
C. Course Number: A426
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Numerical Analysis
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
K. Course Prerequisites: MATH A265 with a minimum grade of C
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: Completion of a programming course with a minimum grade of C
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals. The instructor will:
   1. Provide an introduction to the theory and application of numerical techniques, as applied to problems commonly encountered in mathematics and other relevant disciplines.
   2. Address the merits of various techniques developed and how to properly select a technique for application.
B. Student Learning Outcomes. Students will be able to:
   1. Describe the advantages and disadvantages associated with different numerical techniques.
   2. Select and implement the appropriate numerical technique for a given problem.
   3. Understand the theoretical framework of numerical techniques, including the proofs of convergence and stability where applicable.

IV. Guidelines for evaluation
Assessment may be based on homework assignments, quizzes, tests, a midterm examination, and final examination.

V. Course Level Justification
Students must be proficient in understanding and developing mathematical proofs which begins in MATH A265 Fundamentals of Mathematics but which is typically achieved for analysis topics after completing junior level courses.

VI. Topical Course Outline
A. Introduction to error sources and error estimates.
B. Techniques for linear systems and their eigenvalues & eigenvectors
   a) Direct methods
   b) Iterative methods
C. Techniques for nonlinear equations and systems.
   a) Fixed-Point iteration and contraction
   b) Newton-Raphson-Brown
   c) Homotopy and continuation methods
   d) Error analysis and accelerated convergence
   e) Roots of polynomials
D. Techniques for interpolation and approximation of functions
   a) Polynomial approximation
   b) Divided Differences
   c) Rational function approximation
   d) Hermite & Cubic Spline interpolation
   e) Least squares approximation
   f) Trigonometric & other orthogonal function approximations
   g) Fast Fourier transform
E. Techniques for numerical differentiation and integration
   a) Basic numerical differentiation formulae
   b) Richardson’s extrapolation
   c) Composite & Romberg integration
   d) Adaptive quadrature
   e) Gaussian quadrature
F. Finite Difference techniques for Ordinary Differential Equations
   a) Explicit methods
   b) Implicit methods
   c) Error control & stability
   d) Stiff equations
G. Finite Difference techniques for Partial Differential Equations
   a) A comparison of explicit and implicit techniques focusing on stability questions

VI. Suggested Text
### Course Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course**

**1a. School or College**
- AS CAS

**1b. Division**
- AMSC Division of Math Science

**1c. Department**
- Mathematics & Statistics

**2. Course Prefix**
- MATH

**3. Course Number**
- A431

**4. Previous Course Prefix & Number**
- MATH A431

**5a. Credits/CEUs**
- 3

**5b. Contact Hours**
- (Lecture + Lab) (3+0)

**6. Complete Course Title**
- Introduction to Differential Geometry

**7. Abbreviated Title for Transcript (30 character)**
- Intro to Differential Geometry

**8. Type of Course**
- Academic

**9. Repeat Status No # of Repeats Max Credits**

**10. Grading Basis**
- A-F

**11. Implementation Date**
- From: Fall/2015 To: /9999

**12. Cross Listed with**
- (please specify)

**13a. Impacted Courses or Programs**
- List any programs or college requirements that require this course.
- Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impact Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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</tbody>
</table>

**13b. Coordination Email**
- Date: 02/18/15
- submitted to Faculty Listserv: (ua-faculty@lists.uaa.alaska.edu)

**13c. Coordination with Library Liaison**
- Date: 02/18/15

**14. General Education Requirement**
- Mark appropriate box:
  - Oral Communication
  - Written Communication
  - Quantitative Skills
  - Humanities
  - Fine Arts
  - Social Sciences
  - Natural Sciences
  - Integrative Capstone

**15. Course Description (suggested length 20 to 50 words)**

**16a. Course Prerequisite(s)**
- (list prefix and number or test code and score)
  - MATH A265 with a minimum grade of C
  - MATH A314 with a minimum grade of C

**16b. Co-requisite(s)**
- (concurrent enrollment required)

**16c. Automatic Restriction(s)**
- College
- Level

**16d. Registration Restriction(s)**
- (non-codable)

**17. Mark if course has fees**
- (please specify)

**18. Mark if course is a selected topic course**
- (please specify)

**19. Justification for Action**
- Adds a nationally standard subject that will fulfill a current requirement

**Initiator Name (typed):** Mark Fitch

**Initiator Signed Initials:** __________

**Date:** __________

**Mark if course has fees**
- Approved
- Disapproved

**Mark if course is a selected topic course**
- Approved
- Disapproved

**Initiator (faculty only)**
- Mark Fitch

**Dean/Director of School/College**
- Date

**Undergraduate/Graduate Academic**
- Date

**Provost or Designee**
- Date

---

**Mark Fitch**

---

**Course Action Request**

---

44
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: College of Arts and Sciences
B. Course Prefix: MATH
C. Course Number: A431
D. Number of Credits: 3
E. Contact Hours: 3+0
F. Course Title: Introduction to Differential Geometry
G. Grading Basis: A-F
H. Implementation Date: Fall 2015
I. Cross-listed/Stacked: N/A
J. Course Description: Develops the theory of curves and surfaces in Euclidean spaces. Presents major constructions and theorems including the Frenet-Serret apparatus, geodesics, Gauss’ Theorema Egregium, and the Gauss-Bonnet Theorem. Introduces abstract manifolds.
K. Course Prerequisites: MATH A265 with a minimum grade of C and MATH A314 with a minimum grade of C
L. Course Co-requisites: N/A
M. Other Restrictions: N/A
N. Registration Restrictions: N/A
O. Course Fees: No

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals. The instructor will:
   1. Introduce students to the concepts of differential geometry
   2. Present proofs of major theorems of differential geometry
   3. Introduce examples and applications of differential geometry to mathematics and other areas of study
B. Student Learning Outcomes. Students will be able to:
   1. Recognize curves and surfaces and their properties
   2. Understand proofs of key theorems
   3. Prove differential geometric results

IV. Guidelines for evaluation
Assessment may be based on homework assignments, quizzes, tests, a midterm examination, and final examination.

V. Course Level Justification
Students must have previous experience with abstraction of mathematical concepts and knowledge of the fundamentals of set theory and analysis. The MATH A314 prerequisite ensures that the concept of a vector space will be familiar to the student.

VI. Topical Course Outline
   1.0 Review of Euclidean plane and 3-space
   2.0 Calculus in Euclidean spaces
   3.0 Plane and space curves
   4.0 Local surface theory
5.0  Global surface theory  
6.0  Topics selected from  
   6.1  Minimal Surfaces  
   6.2  Manifold theory  
   6.3  Riemannian geometry  

VI.  Suggested Texts  


VII.  Bibliography  

*Seminal works in the field.*
Memorandum

To: CAS Course and Curriculum
From: Department of Mathematics & Statistics
Date: 3/23/2015
Re: Program Changes

The Department of Mathematical Sciences is proposing the following changes to the Bachelor of Arts, Mathematics; Bachelor of Science, Mathematics; and Minor in Mathematics

Adding two courses as selectives.

The changes are designed to provide an appropriately broad set of selectives for students.
### 1a. School or College
AS CAS

### 1b. Department
Mathematics & Statistics

### 2. Complete Program Title/PREFIX
Minor Mathematics

### 3. Type of Program
Choose one from the appropriate drop down menu: Undergraduate: or Graduate: Minor or CHOOSE ONE

This program is a Gainful Employment Program: ☐ Yes or ☑ No

### 4. Type of Action:
- PROGRAM
  - ☐ Add
  - ☑ Change
  - ☐ Delete
- PREFIX
  - ☐ Add
  - ☐ Change
  - ☐ Inactivate

### 5. Implementation Date (semester/year)
From: Fall/2015 To: /9999

### 6a. Coordination with Affected Units
Department, School, or College:
Initiator Name (typed): Mark Fitch
Initiator Signed Initials: ___________ Date: ___________

### 6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)
Date: 02/18/15

### 6c. Coordination with Library Liaison
Date: 02/18/15

### 7. Title and Program Description - Please attach the following:
- ☑ Cover Memo
- ☑ Catalog Copy in Word using the track changes function.
  *Copy the text directly from the program website of the online catalog and paste into a Word document.

### 8. Justification for Action
Adding two courses to provide sufficient breadth of selectives.

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Initiator (faculty only)
Mark Fitch
Initiator (TYPE NAME)

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<tr>
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</table>

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Students majoring in another subject who wish to minor in Mathematics must complete the following requirements. A total of 18 credits is required for the minor, 6 of which must be approved upper division Mathematics credits.

- **MATH A251**  Calculus I  4
- **MATH A252**  Calculus II  4
- **MATH A253**  Calculus III  4

Complete two courses from the following list.  6

- **MATH A302**  Ordinary Differential Equations
- **MATH A303**  Introduction to Modern Algebra
- **MATH A305**  Introduction to Geometries
- **MATH A306**  Discrete Methods
- **MATH A309**  Introduction to Number Theory
- **MATH A314**  Linear Algebra
- **MATH A321**  Analysis of Several Variables
- **MATH A324**  Introduction to Real Analysis
- **MATH A371**  Stochastic Processes
- **MATH A407**  Mathematical Statistics I
- **MATH A408**  Mathematical Statistics II
- **MATH A410**  Introduction to Complex Analysis
- **MATH A420**  Historical Mathematics
- **MATH A422**  Partial Differential Equations
- **MATH A423**  Advanced Engineering Mathematics
- **MATH A424**  Advanced Engineering Mathematics: Linear Algebra & Numerical Analysis
- **MATH A425**  Advanced Engineering Mathematics: Partial Differential Equations and Complex Variables
- **MATH A426**  Numerical Analysis
- **MATH A430**  Concepts of Topology
- **MATH A431**  Introduction to Differential Geometry
- **MATH A490A**  Selected Topics in Pure Mathematics *
- **MATH A490B**  Selected Topics in Applied Mathematics *

Total Credits  18

* A maximum of 6 credits of **MATH A490A** and/or **MATH A490B** may be applied to the degree requirements.
Students majoring in another subject who wish to minor in Mathematics must complete the following requirements. A total of 18 credits is required for the minor, 6 of which must be approved upper division Mathematics credits.

<table>
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<td>MATH A2052</td>
<td>Calculus II</td>
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<tr>
<td>MATH A2053</td>
<td>Calculus III</td>
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Complete two courses from the following list.

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MATH A302</td>
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<tr>
<td>MATH A303</td>
<td>Introduction to Modern Algebra</td>
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<tr>
<td>MATH A305</td>
<td>Introduction to Geometries</td>
</tr>
<tr>
<td>MATH A306</td>
<td>Discrete Methods</td>
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<tr>
<td>MATH A309</td>
<td>Introduction to Number Theory</td>
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<tr>
<td>MATH A314</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH A321</td>
<td>Analysis of Several Variables</td>
</tr>
<tr>
<td>MATH A324</td>
<td>Advanced Calculus</td>
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<tr>
<td>MATH A371</td>
<td>Stochastic Processes</td>
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<td>MATH A407</td>
<td>Mathematical Statistics I</td>
</tr>
<tr>
<td>MATH A408</td>
<td>Mathematical Statistics II</td>
</tr>
<tr>
<td>MATH A410</td>
<td>Introduction to Complex Analysis</td>
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<tr>
<td>MATH A420</td>
<td>History of Mathematics</td>
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<tr>
<td>MATH A422</td>
<td>Partial Differential Equations</td>
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<tr>
<td>MATH A423</td>
<td>Advanced Engineering Mathematics</td>
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<td>MATH A424</td>
<td>Advanced Engineering Mathematics: Linear Algebra &amp; Numerical Analysis</td>
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<td>MATH A425</td>
<td>Advanced Engineering Mathematics: Partial Differential Equations and Complex Variables</td>
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<td>MATH A426</td>
<td>Numerical Analysis Methods</td>
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<td>MATH A430</td>
<td>Concepts of Topology</td>
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<tr>
<td>MATH A431</td>
<td>Introduction to Differential Geometry</td>
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<tr>
<td>MATH A490A</td>
<td>Selected Topics in Pure Mathematics</td>
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<tr>
<td>MATH A490B</td>
<td>Selected Topics in Applied Mathematics</td>
</tr>
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</table>

Total Credits 18

* A maximum of 6 credits of MATH A490A and/or MATH A490B may be applied to the degree requirements.
1a. School or College  
AS CAS  

1b. Department  
Mathematics & Statistics  

2. Complete Program Title/Prefix  
BA Mathematics  

3. Type of Program  
Choose one from the appropriate drop down menu:  
- Undergraduate:  
  - Bachelor of Arts  
  - Graduate:  
  - CHOOSE ONE  

This program is a Gainful Employment Program:  
☐ Yes or ☒ No  

4. Type of Action:  
- PROGRAM  
  - Add  
  - Change  
  - Delete  
- PREFIX  
  - Add  
  - Change  
  - Inactivate  

5. Implementation Date (semester/year)  
From: Fall 2015  
To: 9999  

6a. Coordination with Affected Units  
Department, School, or College:  
Initiator Name (typed): Mark Fitch  
Initiator Signed Initials: Date:  

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)  
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8. Justification for Action  
Adding two courses to provide sufficient breadth of selectives.  

Initiator (faculty only)  
Mark Fitch  
Initiator (TYPE NAME)  
Date  

☐ Approved  
☐ Disapproved  
Dean/Director of School/College  
Date  

☐ Approved  
☐ Disapproved  
Department Chair  
Date  

☐ Approved  
☐ Disapproved  
Undergraduate/Graduate Academic Board Chair  
Date  

☐ Approved  
☐ Disapproved  
College/School Curriculum Committee Chair  
Date  

☐ Approved  
☐ Disapproved  
Provost or Designee  
Date
**Admission Requirements**
Satisfy the Application and Admission Requirements for Baccalaureate Programs.

**Graduation Requirements**
1. Satisfy the General University Requirements for Baccalaureate Degrees.
2. Complete the General Education Requirements for Baccalaureate Degrees.
3. Complete the College of Arts and Sciences Requirements.
4. Complete the Major Requirements below.

**Major Requirements**

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<th>Core Courses</th>
<th>Title</th>
<th>Credits</th>
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<td>Calculus III</td>
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<td>Fundamentals of Mathematics</td>
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<tr>
<td>MATH A303</td>
<td>Introduction to Abstract Algebra</td>
<td>3</td>
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<tr>
<td>MATH A306</td>
<td>Discrete Methods</td>
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<td>MATH A314</td>
<td>Linear Algebra</td>
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</tr>
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<td>MATH A324</td>
<td>Introduction to Real Analysis</td>
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Select one of the following from Analysis and Topology: 3

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<th>Analysis Courses</th>
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<td>MATH A321</td>
<td>Analysis of Several Variables</td>
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<tr>
<td>MATH A410</td>
<td>Introduction to Complex Analysis</td>
<td></td>
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<td>MATH A430</td>
<td>Concepts of Topology</td>
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<tr>
<td>MATH A431</td>
<td>Introduction to Differential Geometry</td>
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Select one of the following from Applied Math: 3

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<td>MATH A422</td>
<td>Partial Differential Equations</td>
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<tr>
<td>MATH A426</td>
<td>Numerical Analysis</td>
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<tr>
<td>PHYS A456</td>
<td>Nonlinear Dynamics and Chaos</td>
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Select one of the following from Statistics: 3-4

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<tr>
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<tr>
<td>STAT A308</td>
<td>Intermediate Statistics for the Sciences</td>
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</tr>
<tr>
<td>STAT A402</td>
<td>Scientific Sampling</td>
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</tr>
<tr>
<td>STAT A403</td>
<td>Regression Analysis</td>
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</table>
STAT A404 Analysis of Variance  
STAT A407 Time Series Analysis  
STAT A408 Multivariate Statistics  
STAT A490 Selected Topics  
MATH A371 Stochastic Processes  
MATH A407 Mathematical Statistics I  
MATH A408 Mathematical Statistics II  
Select one of the following other mathematics courses:  
MATH A305 Introduction to Geometries  
MATH A309 Introduction to Number Theory  
MATH A420 Historical Mathematics  
Select any six additional credits from any of the four categories above or from the following  
MATH A490A* Special Topics in Pure Mathematics  
MATH A490B* Special Topics in Applied Mathematics  
MATH A495* Mathematics Practicum  
MATH A498* Individual Research  
Total Credits 45-46  

A maximum of 6 credits of MATH A490A, MATH A490B, MATH A495, and/or MATH A498 *may be applied to the degree requirements.

Additional Requirements

- All Mathematics majors must take a standardized test of knowledge of mathematics approved by the Mathematics faculty for the purpose of evaluating program effectiveness. There is no minimum score required for graduation. This test will normally be taken during the senior year.
- All Mathematics majors must complete a portfolio demonstrating their mathematics knowledge. There is no grade for this requirement. The portfolio will normally be submitted in the semester of graduation.

A total of 120 credits is required for the degree, of which 42 credits must be upper division.

Honors in Mathematics
Students majoring in Mathematics are eligible to graduate with departmental honors if they satisfy the following requirements:

1. Meet the requirements for Graduation with Honors
2. Meet the requirements for a BA/BS degree in Mathematics.
3. Earn a grade point average of 3.50 or above in the major requirements.
4. Complete a minimum of 12 upper division credits required for the major in residence.

- See more at:
  http://catalog.uaa.alaska.edu/undergraduateprograms/cas/mathematics/ba-mathematics/#sthash.LNcBhMsd.dpuf
**Admission Requirements**
Satisfy the Application and Admission Requirements for Baccalaureate Programs.

**Graduation Requirements**
1. Satisfy the General University Requirements for Baccalaureate Degrees.
2. Complete the General Education Requirements for Baccalaureate Degrees.
3. Complete the College of Arts and Sciences Requirements.
4. Complete the Major Requirements below.

**Major Requirements**

**Core Courses**
- **MATH A251** Calculus I 4
- **MATH A252** Calculus II 4
- **MATH A253** Calculus III 4
- **MATH A265** Fundamentals of Mathematics 3
- **MATH A303** Introduction to Abstract Algebra 3
- **MATH A306** Discrete Methods 3
- **MATH A314** Linear Algebra 3
- **MATH A324** Introduction to Real Analysis 3

Select one of the following from Analysis and Topology: 3
- **MATH A321** Analysis of Several Variables
- **MATH A410** Introduction to Complex Analysis
- **MATH A430** Concepts of Topology
- **MATH A431** Introduction to Differential Geometry

Select one of the following from Applied Math: 3
- **MATH A302** Ordinary Differential Equations
- **MATH A422** Partial Differential Equations
- **MATH A426** Numerical Analysis
- **PHYS A456** Nonlinear Dynamics and Chaos

Select one of the following from Statistics: 3-4
- **STAT A307** Probability and Statistics
- **STAT A308** Intermediate Statistics for the Sciences
- **STAT A402** Scientific Sampling
- **STAT A403** Regression Analysis
**STAT A404** Analysis of Variance  
**STAT A407** Time Series Analysis  
**STAT A408** Multivariate Statistics  
**STAT A490** Selected Topics  
**MATH A371** Stochastic Processes  
**MATH A407** Mathematical Statistics I  
**MATH A408** Mathematical Statistics II  

Select one of the following other mathematics courses:  

- **MATH A305** Introduction to Geometries  
- **MATH A309** Introduction to Number Theory  
- **MATH A420** Historical Mathematics  

Select any six additional credits from any of the four categories above or from the following:  

- **MATH A490A** Special Topics in Pure Mathematics  
- **MATH A490B** Special Topics in Applied Mathematics  
- **MATH A495** Mathematics Practicum  
- **MATH A498** Individual Research  

**Total Credits 45-46**

*A maximum of 6 credits of MATH A490A, MATH A490B, MATH A495, and/or MATH A498 may be applied to the degree requirements.*

**Additional Requirements**

- All Mathematics majors must take a standardized test of knowledge of mathematics approved by the Mathematics faculty for the purpose of evaluating program effectiveness. There is no minimum score required for graduation. This test will normally be taken during the senior year.

- All Mathematics majors must complete a portfolio demonstrating their mathematics knowledge. There is no grade for this requirement. The portfolio will normally be submitted in the semester of graduation.

A total of 120 credits is required for the degree, of which 42 credits must be upper division.

**Honors in Mathematics**
Students majoring in Mathematics are eligible to graduate with departmental honors if they satisfy the following requirements:

1. Meet the requirements for [Graduation with Honors](http://catalog.uaa.alaska.edu/undergraduateprograms/cas/mathematics/ba-mathematics/#sthash.LNcBhMsd.dpuf)
2. Meet the requirements for a BA/BS degree in Mathematics.
3. Earn a grade point average of 3.50 or above in the major requirements.
4. Complete a minimum of 12 upper division credits required for the major in residence.

- See more at:
http://catalog.uaa.alaska.edu/undergraduateprograms/cas/mathematics/ba-mathematics/#sthash.LNcBhMsd.dpuf
Program/Prefix Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>Mathematics &amp; Statistics</td>
</tr>
</tbody>
</table>

2. Complete Program Title/Prefix  
BS Mathematics

3. Type of Program
Choose one from the appropriate drop down menu:  
Undergraduate:  
Bachelor of Science  
Graduate:  
CHOOSE ONE

This program is a Gainful Employment Program:  
☐ Yes  or  ☒ No

4. Type of Action:
PROGRAM  
☐ Add  ☒ Change  ☐ Delete

PREFIX  
☐ Add  ☐ Change  ☐ Inactivate

5. Implementation Date (semester/year)  
From: Fall/2015  To: /9999

6a. Coordination with Affected Units  
Department, School, or College:  
Initiator Name (typed): Mark Fitch  
Initiator Signed Initials:  Date:

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)  
Date: 02/18/15

6c. Coordination with Library Liaison  
Date: 02/18/15

7. Title and Program Description - Please attach the following:
☒ Cover Memo  
☒ Catalog Copy in Word using the track changes function.  
*Copy the text directly from the program website of the online catalog and paste into a Word document.

8. Justification for Action  
Adding two courses to provide sufficient breadth of selectives.

Initiator (faculty only)  
Mark Fitch  
Initiator (TYPE NAME)  
Date

☐ Approved  ☐ Disapproved  
☐ Approved  ☐ Disapproved  
☐ Approved  ☐ Disapproved  
☐ Approved  ☐ Disapproved

Dean/Director of School/College  
Date  
Undergraduate/Graduate Academic Board Chair  
Date  
Provost or Designee  
Date
Admission Requirements
Satisfy the Application and Admission Requirements for Baccalaureate Programs.

Graduation Requirements
1. Satisfy the General University Requirements for Baccalaureate Degrees.
2. Complete the General Education Requirements for Baccalaureate Degrees.
3. Complete the College of Arts and Sciences Requirements.
4. Complete the Major Requirements below.

Major Requirements

Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH A251</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH A252</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH A253</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH A265</td>
<td>Fundamentals of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH A303</td>
<td>Introduction to Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH A306</td>
<td>Discrete Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH A314</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH A324</td>
<td>Introduction to Real Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following from Analysis and Topology:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH A321</td>
<td>Analysis of Several Variables</td>
<td>3</td>
</tr>
<tr>
<td>MATH A410</td>
<td>Introduction to Complex Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH A430</td>
<td>Concepts of Topology</td>
<td></td>
</tr>
<tr>
<td>MATH A431</td>
<td>Introduction to Differential Geometry</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following from Applied Math:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH A302</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH A422</td>
<td>Partial Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH A426</td>
<td>Numerical Analysis</td>
<td></td>
</tr>
<tr>
<td>PHYS A456</td>
<td>Nonlinear Dynamics and Chaos</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following from Statistics:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT A307</td>
<td>Probability and Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT A308</td>
<td>Intermediate Statistics for the Sciences</td>
<td></td>
</tr>
<tr>
<td>STAT A402</td>
<td>Scientific Sampling</td>
<td></td>
</tr>
<tr>
<td>STAT A403</td>
<td>Regression Analysis</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>STAT A404</td>
<td>Analysis of Variance</td>
<td></td>
</tr>
<tr>
<td>STAT A407</td>
<td>Time Series Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT A408</td>
<td>Multivariate Statistics</td>
<td></td>
</tr>
<tr>
<td>STAT A490</td>
<td>Selected Topics</td>
<td></td>
</tr>
<tr>
<td>MATH A371</td>
<td>Stochastic Processes</td>
<td></td>
</tr>
<tr>
<td>MATH A407</td>
<td>Mathematical Statistics I</td>
<td></td>
</tr>
<tr>
<td>MATH A408</td>
<td>Mathematical Statistics II</td>
<td></td>
</tr>
<tr>
<td>MATH A490A*</td>
<td>Special Topics in Pure Mathematics</td>
<td></td>
</tr>
<tr>
<td>MATH A490B*</td>
<td>Special Topics in Applied Mathematics</td>
<td></td>
</tr>
<tr>
<td>MATH A495*</td>
<td>Mathematics Practicum</td>
<td></td>
</tr>
<tr>
<td>MATH A498*</td>
<td>Individual Research</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following other mathematics courses: 3

Select any six additional credits from any of the four categories above or from the following 6

- MATH A305 Introduction to Geometries
- MATH A309 Introduction to Number Theory
- MATH A420 Historical Mathematics

Total Credits 45-46

* A maximum of 6 credits of MATH A490A, MATH A490B, MATH A495, and/or MATH A498 may be applied to the degree requirements.

**Additional Requirements**

- All Mathematics majors must take a standardized test of knowledge of mathematics approved by the Mathematics faculty for the purpose of evaluating program effectiveness. There is no minimum score required for graduation. This test will normally be taken during the senior year.

- All Mathematics majors must complete a portfolio demonstrating their mathematics knowledge. There is no grade for this requirement. The portfolio will normally be submitted in the semester of graduation.

A total of 120 credits is required for the degree, of which 42 credits must be upper division.
Admission Requirements
Satisfy the Application and Admission Requirements for Baccalaureate Programs.

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1. Satisfy the General University Requirements for Baccalaureate Degrees.
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MATH A371  Stochastic Processes
MATH A407  Mathematical Statistics I
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Select one of the following other mathematics courses: 3
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MATH A309  Introduction to Number Theory
MATH A420  Historical Mathematics
Select any six additional credits from any of the four categories above or from the following 6
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MATH A490B*  Special Topics in Applied Mathematics
MATH A495*  Mathematics Practicum
MATH A498*  Individual Research
Total Credits 45-46

A maximum of 6 credits of MATH A490A, MATH A490B, MATH A495, and/or MATH A498 may be applied to the degree requirements.

Additional Requirements
- All Mathematics majors must take a standardized test of knowledge of mathematics approved by the Mathematics faculty for the purpose of evaluating program effectiveness. There is no minimum score required for graduation. This test will normally be taken during the senior year.
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<tbody>
<tr>
<td>University of Alaska Anchorage</td>
</tr>
<tr>
<td>Proposal to Initiate, Add, Change, or Delete a Course</td>
</tr>
</tbody>
</table>

1a. School or College  
KP KPC

1b. Division  
No Division Code

1c. Department  
Business and Industry

2. Course Prefix  
PETR

3. Course Number  
A101

4. Previous Course Prefix & Number  
A194

5a. Credits/CEUs  
1.0

5b. Contact Hours  
(Lecture + Lab)  
(0+3)

6. Complete Course Title  
Industrial Hand Tools

7. Type of Course  
☒ Academic  ☐ Preparatory/Development  ☐ Non-credit  ☐ CEU  ☐ Professional Development

8. Type of Action:  
☒ Add  ☐ Change  ☐ Delete

9. Repeat Status No  ☐ No  ☐ # of Repeats  ☐ Max Credits

10. Grading Basis  
☒ A-F  ☐ P/NP  ☐ NG

11. Implementation Date  
semester/year  
From: Fall/2015  To: 9999/

12. ☐ Cross Listed with  
☐ Stacked with  
Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.aaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. See Attached List</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): Henry W Haney  
Initiator Signed Initials: __________  
Date: __________

13b. Coordination Email  
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison  
Date: 2-18-15

14. General Education Requirement  
Mark appropriate box:  
☒ Oral Communication  ☐ Written Communication  ☐ Quantitative Skills  ☐ Humanities  
☐ Fine Arts  ☐ Social Sciences  ☐ Natural Sciences  ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)  
Introduces industrial handtools and their safe, efficient, and effective use.

16a. Course Prerequisite(s) (list prefix and number or test code and score)  
None

16b. Co-requisite(s) (concurrent enrollment required)  
N/A

16c. Automatic Restriction(s)  
☒ College  ☐ Major  ☒ Class  ☐ Level

16d. Registration Restriction(s) (non-codable)  

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action  
Provide choice for electives.

Initiator (faculty only)  
Henry W Haney  
Initiator (TYPE NAME)  
☐ Approved  ☐ Disapproved

Date  
Dean/Director of School/College  
Date

☐ Approved  ☐ Disapproved  
Department Chair  
Date

☐ Approved  ☐ Disapproved  
Undergraduate/Graduate Academic  
Board Chair  
Date

☐ Approved  ☐ Disapproved  
Provost or Designee  
Date
I. **Initiation Date:** February 18, 2015

II. **Course Information**
   A. **College:** Kenai Peninsula College
   B. **Course Title:** Industrial Hand Tools
   C. **Course Subject/Number:** PETR A101
   D. **Credit:** 1.0 credits
   E. **Contact Time:** 0+3
   F. **Grading Information:** A-F
   G. **Course Description:** Introduces industrial hand tools and their safe, efficient, and effective use.
   H. **Status of course relative to degree or certificate programs:** Elective
   I. **Lab Fee:** Yes
   J. **Coordination:** UAA Faculty Listserv, Process Technology, Petroleum Technology, Industrial Instrumentation, and Welding Technology.
   K. **Course Prerequisite:** None

III. **Course Level Justification**
    This course introduces students, through hands-on experience and lecture, to various types of industrial hand tools and their safe, efficient, and effective use.

IV. **Instructional Goals**
    The instructor will:
    A. Identify a variety of industrial hand tools and explain their function.
    B. Demonstrate how a variety of industrial hand tools would be used in an effective manner.
    C. Provide an overview of industrial hand tool safety, efficiency and proper tool selection.
    D. Provide a selection of applicable hands-on projects for students to gain familiarity and confidence through the use of industrial hand tools.

V. **Student Learning Outcomes**
<table>
<thead>
<tr>
<th>The student will be able to:</th>
<th>One or more of the following assessment methods will be used:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify a variety of industrial hand tools</td>
<td>Homework and tests</td>
</tr>
<tr>
<td>B. Define the specific uses of a variety of industrial hand tools.</td>
<td>Homework and tests</td>
</tr>
<tr>
<td>C. Explain the safe use of a variety of industrial hand tools.</td>
<td>Homework and tests</td>
</tr>
<tr>
<td>D. Discuss the efficient use of industrial hand tools.</td>
<td>Homework and tests</td>
</tr>
<tr>
<td>E. Select correct industrial hand tools for specific projects.</td>
<td>Projects</td>
</tr>
<tr>
<td>F. Demonstrate acquired skills with industrial hand tools through accomplishing a variety of selected projects.</td>
<td>Projects</td>
</tr>
</tbody>
</table>

**VI. Course Content Outline**

A. Tool use habits
   1. Proper tool selection
   2. Safe tool use: proper clothing, eye protection, hair, and jewelry considerations
   3. Proper tool care
   4. The organized tool box

B. Measuring tools and measurements
   1. Comparison of SAE, Metric, and British measurement systems
   2. Linear and angular measurement
   3. Rulers and measuring tapes
   4. Slide, vernier, and micrometer calipers
   5. Levels and plumb bobs
   6. T-squares, speed squares, and framing squares

C. Wrenches
   1. Pipe wrench sizes: 6” to 36”
   2. Crescent wrench sizes: 6” to 24”
   3. Monkey wrench sizes: 6” to 24”
   4. Box end and open end wrench sizes: ¼” to 1 ½”
   5. Socket wrench drive sizes: ¼” to 1 ½”
   6. Socket wrench socket sizes: 1/16” to 6”
   7. Torque wrenches
   8. Hammer wrenches

D. Gripping tools
   1. Slip joint pliers
   2. Channel lock pliers
   3. Vise grips
   4. Other plier types
E. Cutting tools
   1. Shears and nippers
   2. Wire cutters
   3. Side cutters
   4. Industrial knives
   5. Cold chisels
   6. Hacksaws

F. Striking tools
   1. Hammers
   2. Mallets
   3. Sledges
   4. Brass drifts (specific applications)

G. Screwdrivers (manual and battery-powered)
   1. Flat
   2. Phillips
   3. Other tip types

H. Pneumatic tools
   1. Compressors
   2. Hoses
   3. Tool lubricants

I. Electric tools
   1. Power sources
   2. Power cord selection
   3. Power converters

M. Hydraulic systems
   1. Pump
   2. Hoses fittings

N. Specialty Tools
   1. Gear pullers
   2. Punches
   3. Extractors and easy-outs
   4. Cheater bars
   5. Magnets
   6. Mirrors
   7. Bore scopes
   8. Bolt cutters
   9. Torches
  10. Rags and absorbent materials

O. Shop tools
   1. Portable lifts, hoists and come-alongs
   2. Bench vise and pipe vise
   3. Pipe cutting and threading tools
   4. Hydraulic and mechanical jacks
P. Pipe work specific
   1. Flanges, flange spreaders, gaskets, and alignment spikes
   2. Blinds and spool pieces
   3. Nuts, bolts, and all-thread
   4. Thread preparation

Q. Lubrication
   1. Lube oil and grease
   2. Adhesives and sealants
   3. Anti-seize compounds
   4. Penetrants

R. Abrasive mediums
   1. Sandblasting
   2. Grinding
   3. Sanding
   4. Filing

VII. Suggested Text


VIII. Bibliography


<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Welding Technology Undergraduate Certificate</td>
<td>2-19-15</td>
<td>Fritz Miller</td>
</tr>
</tbody>
</table>

Initiator Name (typed): Henry W. Haney  
Initiator Signed Initials: _________  
Date: _______________
| 1a. School or College | EN SOENGR |
| 1b. Division | No Division Code |
| 1c. Department | Mechanical Engineering |

| 2. Course Prefix | ME |
| 3. Course Number | A460 |
| 4. Previous Course Prefix & Number | N/A |
| 5a. Credits/CEUs | 3 |
| 5b. Contact Hours | (Lecture + Lab) (2+2) |

6. Complete Course Title
Turbomachinery

Abbreviated Title for Transcript (30 character)

| 7. Type of Course | Academic |

8. Type of Action: ☑ Add |

If a change, mark appropriate boxes:
- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions
- Level
- College
- Major
- Other

<table>
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<tr>
<th>9. Repeat Status No</th>
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10. Grading Basis: ☑ A-F | ☑ P/NP | ☑ NG |

11. Implementation Date: semester/year
From: Fall/2015 | To: 99/9999 |

12. ☐ Cross Listed with | N/A |

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
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<tbody>
<tr>
<td>1. Mechanical Engineering</td>
<td>Courtesy Coordination</td>
<td>02/06/2015</td>
<td>Jennifer Brock</td>
</tr>
<tr>
<td>2.</td>
<td></td>
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Initiator Name (typed): Getu Hailu
Initiator Signed Initials: ________ Date: __________

13b. Coordination Email Date: 02/06/2015
submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 02/06/2015

14. General Education Requirement
Mark appropriate box:
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Introduces the application of energy, momentum, and continuity equations to designing turbomachinery such as pumps, compressors, and turbines. Not available for credit to students who have completed ME A660.

16a. Course Prerequisite(s) (list prefix and number)
(ES A341, ES 341L and ME A313) with a grade of C or higher

16b. Test Score(s)
N/A

16c. Co-requisite(s) (concurrent enrollment required)
N/A

16d. Other Restriction(s)
- College
- Major
- Class
- Level

16e. Registration Restriction(s) (non-codable)

17. ☑ Mark if course has fees Standard CoEng fee

18. ☑ Mark if course is a selected topic course

19. Justification for Action
Added to satisfy demand for BSE ME Advanced Engineering Electives.

Initiator (faculty only) Date
Getu Hailu Initiator (TYPE NAME)

Approved Disapproved
Dean/Director of School/College Date

Approved Disapproved
Undergraduate/Graduate Academic Date

Approved Disapproved
Board Chairperson

Approved Disapproved
Provost or Designee Date

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COURSE CONTENT GUIDE
University of Alaska Anchorage, College of Engineering

ME A460
Turbomachinery

1. Course Starting Date Fall 2015
2. Course Information
   A. College College of Engineering (CoENG)
   B. Course Prefix ME
   C. Course Number A460
   D. Number of Credits and Contact Hours
      Number of Credits: 3
      Contact Hours: 2+2
   E. Course Title Turbomachinery
   F. Grading Basis A-F
   G. Implementation Date Fall 2015
   H. Course Description Introduces the application of energy, momentum, and continuity equations to designing turbomachinery such as pumps, compressors, and turbines. Not available for credit to students who have completed ME A660.
   I. Course Prerequisites (ES A341, ES 341L and ME A313) with minimum grade of C.
   J. Course Co-requisites: N/A
   K. Other Restrictions: N/A
   L. Registration Restrictions: N/A
   M. Course Fee Standard CoENG fee
   K. Stacked Yes, with ME A660

3. Course Level Justification
This course builds upon concepts and models developed in junior level fluid mechanics and thermodynamics courses so is a level commensurate with higher level courses.

4. Instructional Goals
The instructor will
   1. Discuss application of energy, momentum, and continuity equations of thermo-fluids to turbomachinery.
   2. Explain incompressible, inviscid fluid/rotor energy transfer using Euler’s equations.
   3. Explain fundamental design principles centrifugal, axial and mixed flow machines, and turbines.
   4. Explain how to construct and analyze velocity diagrams for axial and centrifugal rotors and rotor/stator sets.
5. Present effect of blade geometry, dimensionless performance of turbomachines, similarity and scaling laws.

5. Student Learning Outcomes and Assessment Methods
Students will be evaluated using a variety of tools at the instructor’s discretion which may include but are not limited to those listed below.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, students will be able to:</td>
<td></td>
</tr>
<tr>
<td>1. Apply Euler's equation to analyze incompressible, inviscid fluid/rotor energy transfer in turbomachines.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final exam</td>
</tr>
<tr>
<td>2. Identify various types of turbomachinery. Explain the differences between true turbomachines and positive displacement devices.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final exam</td>
</tr>
<tr>
<td>3. Design radial-flow and radial flow turbomachines. Calculate efficiencies of turbomachines.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final exam</td>
</tr>
<tr>
<td>4. Construct and analyze velocity diagrams for centrifugal and axial rotors and rotor/stator sets.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final exam</td>
</tr>
<tr>
<td>5. Read and interpret performance curves for pumps, fans, and turbines.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final exam</td>
</tr>
<tr>
<td>6. Use scaling laws to predict turbomachine performance, by interpolation or extrapolation from known performance data.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final/comprehensive exam</td>
</tr>
<tr>
<td>7. Compute Net Positive Suction Head (NPSH). Determine methods of avoiding cavitation.</td>
<td>Homework assignments, projects, quizzes, midterm exams, in-class presentations, and a final exam</td>
</tr>
</tbody>
</table>

6. Topical Course Outline
This course will cover a variety of topics related to turbomachinery, which may include but are not limited to:

A. Introduction
   History of Turbomachines, types of turbomachines and application of turbomachines
B. Energy Transfer in Turbomachines
   Review of thermo-fluids theory related to turbomachinery
C. Centrifugal Pumps
Fundamental working principles, fundamental principles of design of centrifugal pumps, performance characteristics, pump selection and applications, cavitation

D. Axial Flow Pumps and Fans
   Introduction, fundamental theory and design procedure of axial flow pumps and fans, fans selection

E. Centrifugal Fans, Blowers and Compressors
   Introduction and classification, fundamental theory and design procedures, performance parameters and characteristics, applications of centrifugal compressors and selection

F. Hydraulic Turbines
   Introduction to hydropower, classification of hydro-turbines, performance characteristics and selection of hydro-turbines

G. Dimensional Analysis
   Dimensions and dimensional homogeneity, Similarity Laws

7. Suggested Text

8. Bibliography
<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>CH College of Health</th>
<th>1b. Division</th>
<th>No Division Code</th>
<th>1c. Department</th>
<th>WAMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Course Prefix</td>
<td>BIOM</td>
<td>3. Course Number</td>
<td>A490</td>
<td>4. Previous Course Prefix &amp; Number</td>
<td>N/A</td>
</tr>
<tr>
<td>5a. Credits/CEUs</td>
<td>1-3</td>
<td>5b. Contact Hours (Lecture + Lab)</td>
<td>(1-3+0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Complete Course Title</td>
<td>Selected Lecture Topics in Biomedicine</td>
<td>7. Type of Course</td>
<td>☑ Academic</td>
<td>☐ Preparatory/Development</td>
<td>☐ Non-credit</td>
</tr>
<tr>
<td>8. Type of Action:</td>
<td>☑ Add or ☐ Change or ☐ Delete</td>
<td>9. Repeat Status Yes</td>
<td>☑ Yes</td>
<td># of Repeats</td>
<td>2</td>
</tr>
<tr>
<td>10. Grading Basis</td>
<td>☑ A-F</td>
<td>☐ P/NP</td>
<td>☐ NG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Implementation Date</td>
<td>semester/year</td>
<td>From: Fall/2015</td>
<td>To: /9999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>☑ Cross Listed</td>
<td>☐ Stacked with BIOM A690</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13a. Impacted Courses or Programs:</td>
<td>List any programs or college requirements that require this course. Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at <a href="http://www.uaa.alaska.edu/governance">www.uaa.alaska.edu/governance</a>.</td>
<td>13b. Coordination Email</td>
<td>Date: 3/3/15</td>
<td>submitted to Faculty Listserv: (<a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a>)</td>
<td></td>
</tr>
<tr>
<td>15. Course Description (suggested length 20 to 50 words)</td>
<td>Detailed coverage of a selected lecture topic in biomedicine. Special Notes: See schedules for specific subtitles to be offered. Course may be repeated for credit up to 3 times only with change in subtitles.</td>
<td>16a. Course Prerequisite(s) (list prefix and number or test code and score)</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16b. Co-requisite(s) (concurrent enrollment required)</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16c. Automatic Restriction(s)</td>
<td>☐ College</td>
<td>☐ Major</td>
<td>☑ Class</td>
<td>☐ Level</td>
<td></td>
</tr>
<tr>
<td>16d. Registration Restriction(s) (non-codable)</td>
<td>☐ Junior or Senior Standing and Faculty Permission</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>☑ Mark if course has fees</td>
<td>18. ☑ Mark if course is a selected topic course</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Justification for Action</td>
<td>Stacking with BIOM A690 will better serve UAA students interested in careers in biomedicine either as health care providers or scientists by providing more selected topic opportunities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I. Date of Initiation: Spring 2015

II. Curriculum Action Request
A. College: College of Health
B. Course Prefix: BIOM
C. Course Number: A490
D. Number of Credits and Contact Hours: 1-3; 1-3+0
E. Course Title: Selected Lecture Topics in Biomedicine
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: BIOM A690
J. Course Description: Detailed coverage of a selected lecture topic in biomedicine. Special Notes: See schedules for specific subtitles to be offered. Course may be repeated for credit up to 3 times only with change in subtitles.

K. Course Prerequisites: N/A
L. Course Co-requisites: N/A
M. Automatic Restrictions: Class
N. Registration Restrictions: Junior or Senior Standing and Faculty Permission
O. Course Fees: No

III. Course Level Justification
This course is designed as an upper division elective comparable to 400-level courses. This course builds upon knowledge acquired in lower division courses in a typical biology or biochemistry undergraduate degree program. This course requires students to synthesize, compare and contrast, and apply course materials to solve complex problems.

IV. Instructional Goals and Student Learning Outcomes
A. Instructional Goals.
The instructor will:
1. describe, summarize, analyze and relate information on the selected topic to support students in developing comprehension of the subject matter
2. guide students in the critical analysis of information to identify normal and abnormal processes in humans
3. guide students in proposing new ways of investigating and/or treating abnormal processes in humans
B. Student Learning Outcomes and Assessment Measures (Example Course)

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion students will be able to:</td>
<td></td>
</tr>
<tr>
<td>1. Determine mean electrical axis of the heart under varying conditions and therapeutic</td>
<td>Problem sets</td>
</tr>
<tr>
<td>interventions</td>
<td></td>
</tr>
<tr>
<td>2. Analyze blood gas status of a patient, and predict response to therapeutics</td>
<td>Problem sets</td>
</tr>
<tr>
<td>3. Calculate renal clearance and acid-basis status of patients</td>
<td>Problem sets</td>
</tr>
<tr>
<td>4. Infer problems with gastrectomy</td>
<td>Case studies</td>
</tr>
<tr>
<td>5. Diagnose patients with conditions including heart failure, dyspnea, polyuria, emphysema, and gastric hyper-acidity</td>
<td>Small group case discussions</td>
</tr>
<tr>
<td>6. Identify current areas of research for heart failure, dyspnea, polyuria, emphysema, and gastric hyper-acidity</td>
<td>Small group case discussions</td>
</tr>
<tr>
<td>7. Describe the fundamental physical and chemical principles underlying basic physiological processes in the cardiovascular, respiratory, renal and gastrointestinal systems</td>
<td>Examinations</td>
</tr>
</tbody>
</table>

V. Topical Course Outline (Example Course)

1. Introduction
   a. Diffusion and osmosis
   b. Primary and secondary active transport
   c. Generation of a resting membrane potential
   d. Action potentials
   e. Muscle contraction

2. Cardiovascular Physiology
   a. Structure and function of the CV system & heart sounds
   b. Cardiac action potential
   c. Electrocardiogram
   d. Intrinsic and extrinsic control of heart rate and contractility
   e. Starling curve
   f. Cardiac vector analysis
   g. Cardiac arrhythmias
   h. Preload, afterload, contractility and the cardiac cycle
   i. Pressure volume loops
   j. Pressure, flow and resistance
   k. Cardiac and vascular function curves
   l. Determinants and control of mean arterial pressure
   m. Capillary fluid exchange
   n. Blood flow control
   o. Shock
3. **Respiratory Physiology**
   a. Surface tension and surfactant
   b. Gas pressures and partial pressures.
   c. Pressure flow and pressure volume relationships
   d. Lung volumes and pulmonary function analysis
   e. Dynamic airway compression
   f. Work of breathing
   g. Alveolar ventilation
   h. Dead space
   i. Oxygen and carbon dioxide transport
   j. A-V O$_2$ difference
   k. Pulmonary gas exchange
   l. Pulmonary shunts, and V/Q inequalities
   m. Sleep apnea and SIDS
   n. Central nervous system control of breathing

4. **Renal Physiology**
   a. Fluid compartments
   b. Balance
   c. Glomerular filtration
   d. Tubuloglomerular feedback
   e. Renal hemodynamics
   f. Renal oxygen consumption
   g. Counter current multiplication in the loop of Henle
   h. Sodium transport
   i. Renin-angiotensin-aldosterone system (RAAS)
   j. Potassium transport
   k. Bicarbonate and hydrogen ion transport
   l. Water transport (ADH)
   m. Atrial natriuretic peptide (or factor)
   n. Diuretics
   o. Calcium and phosphate transport
   p. Tubular secretion
   q. Renal clearance (inulin, PAH, glucose, free water)
   r. Dialysis
   s. Micturition

5. **Acid-Base Physiology**
   a. Acids and bases
   b. Respiratory disturbances
   c. Metabolic disturbances
   d. Compensation for acid-base disturbances
   e. Anion gap

6. **Gastro Intestinal Physiology**
   a. Gastro intestinal function
   b. Enteric nervous system
   c. Salivary secretion
d. Swallowing (deglutition)
e. Acid secretion in the stomach
f. Gastrointestinal motility and hormones
g. Pancreatic secretion
h. Protein breakdown
i. Chloride channels and cystic fibrosis
j. Function of the gall bladder and bile
k. Absorption of fats
l. Carbohydrate and amino acid absorption
m. Large intestine
n. Defecation
o. Problems associated with the GI tract

VI. Suggested Texts

VII. Bibliography (American Medical Association style)


## Proposal to Initiate, Add, Change, or Delete a Course

### 1. School or College
- **CH** College of Health

### 2. Course Prefix
- **BIOM**

### 3. Course Number
- **A690**

### 4. Previous Course Prefix & Number
- **N/A**

### 5. Credits/CEUs
- **1-3**

### 6. Complete Course Title
- **Advanced Selected Topics in Biomedicine**
- **Advisement Selected Topic Biomedicine**

### 7. Type of Course
- **☐** Academic
- **☐** Preparatory/Development
- **☐** Non-credit
- **☐** CEU
- **☐** Professional Development

### 8. Type of Action
- **☐** Add
- **☐** Change
- **☒** Delete

### 9. Repeat Status
- **Yes**
- **# of Repeats** 2
- **Max Credits** 9

### 10. Grading Basis
- **☒** A-F
- **☐** P/NP
- **☐** NG

### 11. Implementation Date
- **From:** Fall/2015
- **To:** 9999

### 12. Cross Listed with
- **☒** Stacked with **BIOM A490**
- **☐** Cross-Listed Coordination

### 13. Impacted Courses or Programs
- List any programs or college requirements that require this course.
- Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Impact Program/ Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 14. General Education Requirement
- **☐** Oral Communication
- **☐** Written Communication
- **☐** Quantitative Skills
- **☐** Humanities
- **☐** Fine Arts
- **☐** Social Sciences
- **☐** Natural Sciences
- **☐** Integrative Capstone

### 15. Course Description (suggested length 20 to 50 words)
Advanced coverage of a selected topic within biomedicine. Students enrolled in BIOM A690 will be required to complete additional work and at a higher level than students enrolled in BIOM A490 with the same subtitle. Special Notes: With a change in subtitle, course may be repeated for credit. Not available for credit to students who have completed BIOM A490 having the same subtitle. May be repeated for a maximum of 9 credits.

### 16a. Course Prerequisite(s)
- **N/A**

### 16b. Co-requisite(s)
- **N/A**

### 16c. Automatic Restriction(s)
- **☐** College
- **☐** Major
- **☐** Class
- **☒** Level

### 16d. Registration Restriction(s)
- **(non-codable)**

### 17. Mark if course has fees
- **☒** Mark if course is a selected topic course

### 18. Justification for Action
The changes made to this course, including grading basis and stacking with BIOM A490, will better serve UAA based master’s and doctoral students with interests in biomedicine by allowing for more opportunities to study specific selected topics.

### Initiator (faculty only)
- **Cindy Knall, PhD**

### Chair/Coordinator Contacted
- **Date:**

### Approval/Disapproval
- **Approved**
- **Disapproved**

### Department Chair
- **Date:**

### Undergraduate/Graduate Academic
- **Date:**

### Provost or Designee
- **Date:**
I. Date of Initiation: Spring 2015

II. Curriculum Action Request
A. College: College of Health
B. Course Prefix: BIOM
C. Course Number: A690
D. Number of Credits and Contact Hours: 1-3; 1-3+0
E. Course Title: Advanced Selected Topics in Biomedicine
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: BIOM A490
J. Course Description: Advanced coverage of a selected topic within biomedicine. Students enrolled in BIOM A690 will be required to complete additional work and at a higher level than students enrolled in BIOM A490 with the same subtitle. Special Notes: With a change in subtitle, course may be repeated for credit. Not available for credit to students who have completed BIOM A490 having the same subtitle. May be repeated for a maximum of 9 credits.

K. Course Prerequisites: N/A
L. Course Co-requisites: N/A
M. Automatic Restrictions: Level
N. Registration Restrictions: Graduate Standing and Faculty Permission
O. Course Fees: No

III. Course Level Justification
This course is designed to expose students, pursuing graduate level study in biomedicine, to current research and scholarly topics in a select topic area of biomedicine. The expectation is that students will analyze and evaluate research and clinical data to formulate diagnoses and future avenues of research within biomedicine. This course presumes the students possess skills acquired in a typical biology or biochemistry undergraduate degree program.

IV. Instructional Goals and Student Learning Outcomes
A. Instructional Goals.
The instructor will:
1. describe, summarize, analyze and relate information on the selected topic to support students in developing comprehension of the subject matter
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<td>1. Determine mean electrical axis of the heart under varying conditions and therapeutic interventions</td>
<td>Problem sets</td>
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<td>2. Analyze blood gas status of a patient, and predict response to therapeutics</td>
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</tr>
<tr>
<td>7. Describe the fundamental physical and chemical principles underlying basic physiological processes in the cardiovascular, respiratory, renal and gastrointestinal systems</td>
<td>Examinations</td>
</tr>
<tr>
<td>8. Evaluate the current literature in an area of relevance to this special topic</td>
<td>Review article written at a professional level</td>
</tr>
<tr>
<td>9. Communicate advanced biomedical concepts within the special topic to an undergraduate audience</td>
<td>Presentation to undergraduate students enrolled in the corresponding A490 course</td>
</tr>
</tbody>
</table>

V. Topical Course Outline (Example Course)

1. Introduction
   a. Diffusion and osmosis
   b. Primary and secondary active transport
   c. Generation of a resting membrane potential
   d. Action potentials
   e. Muscle contraction

2. Cardiovascular Physiology
   a. Structure and function of the CV system & heart sounds
   b. Cardiac action potential
   c. Electrocardiogram
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   f. Cardiac vector analysis
   g. Cardiac arrhythmias
   h. Preload, afterload, contractility and the cardiac cycle
   i. Pressure volume loops
   j. Pressure, flow and resistance
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p. Fetal circulation

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a. Surface tension and surfactant
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h. Dead space
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k. Pulmonary gas exchange
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n. Central nervous system control of breathing

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d. Tubuloglomerular feedback
e. Renal hemodynamics
f. Renal oxygen consumption
g. Counter current multiplication in the loop of Henle
h. Sodium transport
i. Renin-angiotensin-aldosterone system (RAAS)
j. Potassium transport
k. Bicarbonate and hydrogen ion transport
l. Water transport (ADH)
m. Atrial natriuretic peptide (or factor)
n. Diuretics
o. Calcium and phosphate transport
p. Tubular secretion
q. Renal clearance (inulin, PAH, glucose, free water)
r. Dialysis
s. Micturition

5. Acid-Base Physiology
a. Acids and bases
b. Respiratory disturbances
c. Metabolic disturbances
d. Compensation for acid-base disturbances
e. Anion gap
6. **Gastro Intestinal Physiology**
   a. Gastro intestinal function
   b. Enteric nervous system
   c. Salivary secretion
   d. Swallowing (deglutition)
   e. Acid secretion in the stomach
   f. Gastrointestinal motility and hormones
   g. Pancreatic secretion
   h. Protein breakdown
   i. Chloride channels and cystic fibrosis
   j. Function of the gall bladder and bile
   k. Absorption of fats
   l. Carbohydrate and amino acid absorption
   m. Large intestine
   n. Defecation
   o. Problems associated with the GI tract

VI. **Suggested Texts**

VII. **Bibliography (American Medical Association style)**


I. The Music Department is seeking to change the prerequisites for MUS A221 Music History I (3 credits)

The music department faculty have decided that the prerequisites for this course should be changed in order to ensure that students entering the music history sequence required of music majors will have adequate score-reading and writing skills to successfully complete the course. To that end, we have decided that the prerequisites should be changed to require successful completion of both MUS A131 (Theory I) and ENGL A111 (Introduction to Composition), with exceptions to be allowed for well-prepared students with permission of the instructor.

II. The Music Department is seeking to change the prerequisites for MUS A222 Music History II (3 credits)

The music faculty have decided that the CCG and course description for MUS A221 should not include coverage of World Music, since the music department is now providing much more comprehensive attention to World Music in separate new course offerings (MUS A215 and MUS A216). The music faculty have also decided that MUS A221 should serve as a pre-requisite to MUS A222, in lieu of the current prerequisites: (MUS A121 or MUS A131), since the score-analysis skills needed to successfully complete MUS A222 are introduced in MUS A221, and since the chronological organization of these two courses fosters a better grasp of important historical developments in music.
### Course Action Request
#### University of Alaska Anchorage
Proposal to Initiate, Add, Change, orDelete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>AS CAS</th>
<th>1b. Division</th>
<th>AFAR Division of Fine Arts</th>
<th>1c. Department</th>
<th>MUSIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Course Prefix</td>
<td>MUS</td>
<td>3. Course Number</td>
<td>A221</td>
<td>4. Previous Course Prefix &amp; Number</td>
<td></td>
</tr>
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<td></td>
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<td>13a. Impacted Courses or Programs:</td>
<td>List any programs or college requirements that require this course.</td>
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<td>Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at <a href="http://www.uaa.alaska.edu/governance">www.uaa.alaska.edu/governance</a>.</td>
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<td><strong>Impacted Program/Course</strong></td>
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<td>3. B.M. Music Education</td>
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<td>14. General Education Requirement</td>
<td>Mark appropriate box:</td>
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<td>Oral Communication</td>
<td>Written Communication</td>
<td>Quantitative Skills</td>
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<td>Fine Arts</td>
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<tr>
<td>15. Course Description (suggested length 20 to 50 words)</td>
<td></td>
<td>Music before 1800. Examines stylistic developments and structures of important musical genres from Antiquity to 1800 within their historical and cultural contexts. Special Note: BA music majors may not use this course towards their GER-Fine Arts or CAS Humanities sequence requirements.</td>
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<td>16a. Course Prerequisite(s) (list prefix and number or test code and score)</td>
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<td>MUS A131 and ENGL A111 - Students must earn a grade of &quot;C&quot; or better to qualify for admittance to MUS A221</td>
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<td>16b. Co-requisite(s) (concurrent enrollment required)</td>
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<td>17. Mark if course has fees</td>
<td>18. Mark if course is a selected topic course</td>
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<tr>
<td>19. Justification for Action</td>
<td></td>
<td>The music department faculty have decided that the prerequisites for this course should be changed in order to ensure that students entering the music history sequence required of music majors will have adequate score-reading and writing skills to successfully complete the course. To that end, we have decided that the prerequisites should be changed to require successful completion of both MUS A131 and ENGL A111, with a minumum grade of &quot;C&quot; in both courses.</td>
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<td>Date</td>
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<td>John Lutterman</td>
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85
COURSE CONTENT GUIDE
UNIVERSITY OF ALASKA ANCHORAGE
Department of Music

I. Date Initiated
   Fall Semester, 2015

II. Course Information
   College/School:    College of Arts and Sciences
   Department:       Music
   Program:          Music
   Course Title:     History of Western Art Music I
   Course Number:    MUS A221
   Credits:          3
   Contact Hours:    3 + 0
   Grading Basis:   A-F
   Course Description: Music before 1800. Examines stylistic
developments and structures of important musical
genres from Antiquity to 1800 within their
historical and cultural contexts.
   Cross Listed:     No
   Course Prerequisites: MUS A131 and ENGL A111, with a minimum
                      grade of “C” in each course.
   Registration Restrictions: None
   Fees:             No
   Special Note:     BA music majors may not use this course towards
                      their GER-Fine Arts or CAS Humanities sequence
                      requirements.

III. Course Activities
   Class activities include guided discussion of assigned readings as well as close
   examination and analysis of music scores. The student will be required to listen
   to examples of important works of music and submit written assignments as
   required. The written assignments will involve a substantial research paper.

IV. Course Level Justification: This course prepares the music student for all upper
   division Music History Seminars that are required for graduation.

V. Course Outline:
   A. Development of analytical skills, including the formal and stylistic analysis of musical
      compositions and performances, close reading of specific works, and critically examining
      the nature of historical documents and artifacts.

   B. Learning to recognize different styles and periods in the history of Western art music,
      from Antiquity to the Medieval, Renaissance, Baroque and Classical eras, with particular
      focus on the ability to identify significant composers, forms and genres.
C. Cultivating a broader cultural/historical perspective on musical developments, with attention to developments in the other arts, and to the effects of social and political history on the social status of composers, performers and audiences.

VI. Instructional Goals and Student Learning Outcomes:

<table>
<thead>
<tr>
<th>A. Instructional Goals.</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>The instructor will:</td>
<td></td>
</tr>
<tr>
<td>1. Explain the significance and evolving roles that music played in Western culture from Antiquity through the Medieval, Renaissance, Baroque and Classical eras.</td>
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</tr>
<tr>
<td>2. Organize and place selected music examples into their respective periods of social, artistic, and political history.</td>
<td></td>
</tr>
<tr>
<td>3. Demonstrate the characteristics of significant styles and genres with scores, recordings, and video demonstrations.</td>
<td></td>
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<table>
<thead>
<tr>
<th>B. Student Learning Outcomes</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and describe music from Antiquity, Medieval, Renaissance, Baroque and Classical eras</td>
<td>Written assignments, Research paper</td>
</tr>
<tr>
<td>Place works of music in their historical contexts</td>
<td>Objective examinations</td>
</tr>
<tr>
<td>Analyze musical styles and present a reasoned assessment of their significance</td>
<td>Special project</td>
</tr>
<tr>
<td>Develop awareness of historically informed performing practices</td>
<td>Special project</td>
</tr>
<tr>
<td>Recognize the impact of music respective to periods of social, artistic and political history</td>
<td>Special project</td>
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VII. Bibliography:


Course Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course

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<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<tr>
<td>AS CAS</td>
<td>AFAR Division of Fine Arts</td>
<td>MUSIC</td>
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<th>2. Course Prefix</th>
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<th>4. Previous Course Prefix &amp; Number</th>
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6. Complete Course Title  
History of Western Art Music II

Abbreviated Title for Transcript (30 character)

7. Type of Course  
☑ Academic  ☐ Preparatory/Development  ☐ Non-credit  ☐ CEU  ☐ Professional Development

8. Type of Action:  ☐ Add  ☑ Change  ☐ Delete

If a change, mark appropriate boxes:  
☐ Prefix  ☐ Course Number  ☐ Credits  ☐ Contact Hours  ☐ Title  ☑ Repeat Status  ☐ Grading Basis  ☐ Cross-Listed/Stacked  ☐ Course Description  ☐ Course Prerequisites  ☐ Test Score Prerequisites  ☐ Co-requisites  ☐ Automatic Restrictions  ☐ Registration Restrictions  ☐ General Education Requirement  ☐ Class  ☐ Level  ☐ College  ☐ Major  ☐ Other CCG (please specify)

9. Repeat Status No  # of Repeats  Max Credits

10. Grading Basis  ☑ A-F  ☐ P/NP  ☐ NG

11. Implementation Date  semester/year
From: Fall/2015  To: 9999

12. ☐ Cross Listed with  ☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

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<td>2/20/15</td>
<td>Dr. Christopher Sweeney</td>
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<td>2. B.M. Music - Music Performance</td>
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<td>3. B.M. Music - Music Education</td>
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<td>Dr. Christopher Sweeney</td>
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Initiator Name (typed): John Lutterman  
Initiator Signed Initials:  
Date:  

13b. Coordination Email   Date: 2/23/15   submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison   Date: 2/20/15

14. General Education Requirement  
Mark appropriate box:  
☐ Oral Communication  ☐ Written Communication  ☐ Quantitative Skills  ☐ Humanities  
☐ Fine Arts  ☐ Social Sciences  ☐ Natural Sciences  ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)  
Western Art music since 1800. Examines stylistic developments and structures of important musical genres from 1800 to the present within their historical and cultural contexts. Special Note: B.A. majors may not use this course toward the Fine Arts or CAS Humanities sequence requirements. Attributes: UAA Fine Arts GER, UAA Humanities GER.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
MUS A221, with a minimum grade of a "C"  
16b. Co-requisite(s) (concurrent enrollment required)

16c. Automatic Restriction(s)
☐ College  ☐ Major  ☐ Class  ☐ Level  
16d. Registration Restriction(s) (non-codable)

17. ☐ Mark if course has fees  
18. ☐ Mark if course is a selected topic course

19. Justification for Action  
The music faculty have decided that the CCG and course description for MUS A221 should not include coverage of World Music, since the music department is now providing much more comprehensive attention to World Music in separate new course offerings (MUS A215 and MUS A216). The music faculty have also decided that MUS A221 should serve as a pre-requisite to MUS A222, in lieu of the current prerequisites: (MUS A121 or MUS A131), since the score-analysis skills needed to successfully complete MUS A222 are introduced in MUS A221, and since the chronological organization of these two courses fosters a better grasp of important historical developments in music.
<table>
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<th>Dean/Director of School/College</th>
<th>Date</th>
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I. Date Initiated
Fall Semester, 2015

II. Course Information
College/School: College of Arts and Sciences
Department: Music
Program: Music
Course Title: History of Western Art Music II
Course Number: MUS A222
Credits: 3
Contact Hours: 3 + 0
Grading Basis: A-F
Course Description: Western Art music since 1800. Examines stylistic developments and structures of important musical genres from 1800 to the present within their historical and cultural contexts. Special Note: BA music majors may not use this course towards their GER-Fine Arts or CAS Humanities sequence requirements.

Cross Listed: No
Course Prerequisites: MUS A21
Registration Restrictions: None
Fees: No
Special Note: BA music majors may not use this course towards their GER-Fine Arts or CAS Humanities sequence requirements.

III. Course Activities
Class activities include guided discussion of assigned readings as well as close examination and analysis of music scores. The student will be required to listen to examples of important works of music and submit written assignments as required. The written assignments will involve a substantial research paper.

IV. Course Level Justification: This course prepares the music student for all upper division Music History Seminars that are required for graduation.
V. Course Outline:

A. Development of analytical skills, including the formal and stylistic analysis of musical compositions and performances, close reading of specific works, and critically examining the nature of historical documents and artifacts.

B. Learning to recognize different styles and periods in the history of Western art music, from 1800 to the present, with particular focus on the ability to identify significant composers, forms and genres.

C. Cultivating a broader cultural/historical perspective on musical developments, with attention to developments in the other arts, and to the effects of social and political history on the social status of composers, performers and audiences.

VI. Instructional Goals and Student Learning Outcomes:

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<tr>
<th>A. Instructional Goals.</th>
<th>The instructor will:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain the significance and evolving roles that music has played in Western culture from 1800 to the present.</td>
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<tr>
<td>2. Organize and place selected music examples into their respective periods of social, artistic, and political history.</td>
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<thead>
<tr>
<th>B. Student Learning Outcomes</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and describe Western art music of the Romantic, Modernist, and Post-Modern eras.</td>
<td>Written assignments, Research paper</td>
</tr>
<tr>
<td>Place works of music in their historical contexts</td>
<td>Objective examinations</td>
</tr>
<tr>
<td>Analyze musical styles and present a reasoned assessment of their significance</td>
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Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College  
AS CAS

1b. Division  
AHUM Division of Humanities

1c. Department  
AKNS

2. Course Prefix  
AKNS

3. Course Number  
A461

4. Previous Course Prefix & Number  
n/a

5a. Credits/CEUs  
3

5b. Contact Hours  
(Lecture + Lab) (3+0)

6. Complete Course Title  
Decolonizing Methodologies

7. Type of Course  
☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action:  
☒ Add ☐ Change ☐ Delete

9. Repeat Status No  ☑ # of Repeats 0

10. Grading Basis  
☒ A-F ☐ P/NP ☐ NG

11. Implementation Date  
From: fall/2015 To: 9999

12. Cross Listed with  
АНТ

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

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Initiator Name (typed): MW  
Initiator Signed Initials: _________  
Date: __________

13b. Coordination Email  
Date: 1/20/2015

13c. Coordination with Library Liaison  
Date: _______

14. General Education Requirement  
Mark appropriate box:

☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities

☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)  
Introduces research methods that are informed by Indigenous ways of producing and sharing knowledge, ethical considerations, collaborative research design with Indigenous communities and peoples, the sharing of research materials and outcomes, multivocal authorship, learning to integrate responsibilities as a researcher, and the respect for cultural property rights and ownership.

16a. Course Prerequisite(s) (list prefix and number or test code and score)  
AKNS A201 OR ANTH 200 OR ANTH 335 (with minimum grade of C)

16b. Co-requisite(s) (concurrent enrollment required)  
n/a

16c. Automatic Restriction(s)  
☒ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) (non-codable)  

17. ☒ Mark if course has fees  

18. ☐ Mark if course is a selected topic course  

19. Justification for Action  
Decolonizing Methodologies courses are now an expected course in Anthropology, Indigenous, and ethnic studies programs.

Initiator (faculty only)  
Maria Williams  
Initiator (TYPE NAME)

Approved ☐  Disapproved ☐  Date __________

Dean/Director of School/College  
Date __________

Undergraduate/Graduate Academic Board Chair  
Date __________

Provost or Designee  
Date __________

Approved ☐  Disapproved ☐  Date __________

Approved ☐  Disapproved ☐  Date __________

Approved ☐  Disapproved ☐  Date __________

Approved ☐  Disapproved ☐  Date __________
COURSE CONTENT GUIDE
UNIVERSITY OF ALASKA ANCHORAGE
Alaska Native Studies Program

I. Date Initiated
   March 23, 2015

II. Course Information
    College/School: College of Arts and Sciences
    Department: Alaska Native Studies
    Program: Alaska Native Studies
    Course Title: Decolonizing Methodologies
    Course Number: AKNS A461
    Credits: 3
    Contact Hours: 3 + 0
    Grading Basis: A-F
    Course Description: Introduces research methods that are informed by
    Indigenous ways of producing and sharing knowledge, ethical considerations, collaborative research design with
    Indigenous communities and peoples, the sharing of research materials and outcomes, multivocal authorship,
    learning to integrate responsibilities as a researcher, and the respect for cultural property rights and ownership.
    Cross Listing Yes – with ANTH A461
    Course Prerequisites: AKNS A201 OR ANTH A200 OR ANTH 335 (with
    minimum grade of C)
    Registration Restrictions: None
    Fees: Yes

III. Course Activities
    In general, the course will involve a combination of:
    A. Lectures
    B. Discussions
    C. Guest speakers
    D. Student research design

IV. Course Level Justification
    This 400-level class provides an in-depth examination of decolonizing research
    methods. Students will be required to analyze collaborative research design with
    Indigenous communities and peoples, to apply ethical considerations in their own
    work, to develop ways of sharing research materials and outcomes, to integrate
    responsibilities as a researchers with respect for cultural property rights and
    ownership, and to elaborate on these methods within their own fields of study.

V. Course Outline
    This upper division course will introduce students to the history of scientific research
    and Indigenous knowledge systems through lectures, reading, class discussions and
guest lecturers. Students will be required to create a final research project. The course materials include significant reading and discussion.

1. Overview of history of scientific research. What are Indigenous methodologies?
2. Decolonizing Research Methods
3. Community-Based research Paradigms
4. Virtual Representations of Indigenous peoples
5. History/Ethnohistory
6. Anthropology and Archaeology
7. Museums and Institutional Collections
8. Natural Sciences
9. Ecology
10. Health
11. Education
12. Psychology
13. Business/Economy

VI. Instructional Goals and Student Learning Outcomes

A. Instructional Goals.
   The instructor will:

   1. Engage students through lecture and discussion on the history of scientific research and Indigenous knowledge systems.

   2. Assist students in analyzing, processing, and applying course material related to Indigenous paradigms of research methods through providing feedback on reflection papers, and moderating online and in-class discussions.

   3. Advise students on selecting a research topic and guide them in locating research sources pertaining to their class projects.

   4. Empower students to use the understanding of Indigenous research methodologies gained in this course to design ethically sound and socially engaged collaborative projects.

B. Student Learning Outcomes.
   Students will be able to:

<table>
<thead>
<tr>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class discussions, student presentations, papers and exams.</td>
</tr>
</tbody>
</table>

   1. Demonstrate an understanding of the history of scientific research, its origins, including its roots in colonialism and post-colonialism, methodologies, development into disciplines, and relevance for interdisciplinary collaboration.
2. Describe, analyze, compare, and critically evaluate Euro-American and Indigenous paradigms of research methods, producing knowledge, and sharing research outcomes. | Exams, in-class exercises, and class discussions.

3. Articulate and apply Indigenous and non-Indigenous research methods to interpret and present traditional Indigenous knowledge and scientific research results as complementary and not competing bodies of understanding of the world. | Exams, discussions, individual student research project.

4. Recognize and acknowledge personal bias and use the skills and concepts learned in this course to apply critical self-reflection regarding professional roles in collaboration with Indigenous communities. | Class discussions, presentations, papers.

VIII. Suggested Text


IX. Bibliography


1a. School or College

AS CAS

1b. Department

Alaska Native Studies

2. Complete Program Title/Prefix

AKNS Minor

3. Type of Program

Choose one from the appropriate drop down menu:

Undergraduate: or Graduate: CHOOSE ONE

This program is a Gainful Employment Program:

☐ Yes or ☒ No

4. Type of Action:

PROGRAM

☐ Add

☒ Change

☐ Delete

PREFIX

☐ Add

☐ Change

☐ Inactivate

5. Implementation Date (semester/year)

From: 08/2015 To: /

6a. Coordination with Affected Units

Department, School, or College: Anthropology

Initiator Name (typed): Maria Williams

Initiator Signed Initials: _________

Date:________________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)

Date: 1/20/2015

6c. Coordination with Library Liaison

Date: 11/14/2014

7. Title and Program Description - Please attach the following:

☒ Cover Memo

☒ Catalog Copy in Word using the track changes function. *

*Copy the text directly from the program website of the online catalog and paste into a Word document.

8. Justification for Action

Adding this course to the Alaska Native Studies minor as an elective.

Initiator (faculty only)

Maria Williams

Initiator (TYPE NAME)

☒ Approved

☐ Disapproved

Dean/Director of School/College

Date

☐ Approved

☐ Disapproved

Department Chair

Date

☐ Approved

☐ Disapproved

Undergraduate/Graduate Academic

Board Chair

Date

☑ Disapproved

Provost or Designee

Date
Minor in Alaska Native Studies

Core Courses
AKNS A201 Alaska Native Perspectives 3
AKNS A492 Cultural Knowledge of Native Elders 3
Complete 7 to 9 credits in one of the following focus areas: 7-9

Policy Focus
AKNS A290 Topics in Alaska Native Studies
AKNS/PS A346 Alaska Native Politics
AKNS/PS A411 Tribes, Nations, and Peoples
AKNS/ANTH A461 Decolonizing Methodologies
AKNS A490 Advanced Topics in Alaska Native Studies

Language Focus
AKNS A101A Elementary Central Yup'ik Language I
or AKNS A101B Elementary Tlingit Language I
or AKNS A101C Elementary Alaska Native Language I
or AKNS A101E Elementary Alutiiq Language I
AKNS A102A Elementary Central Yup'ik Language II
or AKNS A102B Elementary Tlingit Language II
or AKNS A102C Elementary Alaska Native Language II
or AKNS A102E Elementary Alutiiq Language II
Complete 6 credits from the following (must be courses other than those taken for above focus areas): 6
AKNS A101A Elementary Central Yup'ik Language I
AKNS A101B Elementary Tlingit Language I
AKNS A101C Elementary Alaska Native Language I
AKNS A101E Elementary Alutiiq Language I
AKNS A102A Elementary Central Yup'ik Language II
AKNS A102B Elementary Tlingit Language II
AKNS A102C Elementary Alaska Native Language II
AKNS A102E Elementary Alutiiq Language II
AKNS A109A Central Yup'ik Orthography
AKNS A109B Tlingit Orthography
AKNS A109C Alaska Native Language Orthography
AKNS A109D Alutiiq Orthography

AKNS/MUS A215 Music of Alaska Natives and Indigenous Peoples of Northern Regions
AKNS/MUS A216 World Indigenous Music
AKNS A290 Topics in Alaska Native Studies
AKNS/PS A346 Alaska Native Politics
AKNS/PS A411 Tribes, Nations, and Peoples
AKNS A490 Advanced Topics in Alaska Native Studies
AKNS A495 Alaska Native Studies Internship
ANTH A200 Natives of Alaska
ANTH A427 Ethnohistory of Alaska Natives
ANTH A435 Northwest Coast Cultures
<table>
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<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ANTH A436</td>
<td>Aleut Adaptations</td>
</tr>
<tr>
<td>ENGL A445</td>
<td>Alaska Native Literatures</td>
</tr>
<tr>
<td>HIST A341</td>
<td>History of Alaska</td>
</tr>
<tr>
<td>JUST A355</td>
<td>Rural Justice</td>
</tr>
</tbody>
</table>

Total Credits 19-21

A minimum of 19 credits is required for the minor, of which 6 credits must be upper division.

See more at:
http://catalog.uaa.alaska.edu/undergraduateprograms/cas/alaskanativestudies/minor-alaskanativestudies/#sthash.igbAEKgx.dpuf
From: Medeia Csoba DeHass – Anthropology and Alaska Native Studies

To: Undergraduate Academic Board

Cc: Diane Hanson – Anthropology, Maria Williams – Alaska Native Studies Program

Date: 3/04/2015

Re: New Course - AKNS/ANTH 461 – Decolonizing Methodologies

I am respectfully requesting the Undergraduate Academic Board to review the submitted Course Action Requests (CARs), Course Content Guides (CCGs), Resource Implication Forms, Lab Fee Request Forms, Catalog Copies, and Program Action Request Forms pertaining to a new course, Decolonizing Methodologies. I am proposing to offer this 400 level course cross listed between Alaska Native Studies and Anthropology.
### Course Action Request

**University of Alaska Anchorage**  
Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>ASSC Division of Social Science</td>
<td>ANTH</td>
</tr>
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<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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<tbody>
<tr>
<td>ANTH</td>
<td>A461</td>
<td>n/a</td>
<td>3</td>
<td>(3+0)</td>
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</tbody>
</table>

**6. Complete Course Title**  
Decolonizing Methodologies  
Decolonizing Methodologies  
Abbreviated Title for Transcript (30 character)

**7. Type of Course**  
☑ Academic  
☐ Preparatory/Development  
☐ Non-credit  
☐ CEU  
☐ Professional Development

**8. Type of Action:**  
☒ Add  
☐ Change  
☐ Delete

**If a change, mark appropriate boxes:**  
☐ Prefix  
☐ Credits  
☐ Title  
☐ Grading Basis  
☐ Course Description  
☐ Test Score Prerequisites  
☐ Co-requisites  
☐ Automatic Restrictions  
☐ Repeat Status  
☐ Cross-Listed/Stacked  
☐ Contact Hours  
☐ General Education Requirement  
☐ Other (please specify)

**9. Repeat Status No**  
☐ # of Repeats  
☐ Max Credits

**10. Grading Basis**  
☒ A-F  
☐ P/NP  
☐ NG

**11. Implementation Date**  
Semester/year  
From: Fall/2015  
To: 9999

**12. Cross Listed with**  
AKNS

**13a. Impacted Courses or Programs:**  
List any programs or college requirements that require this course.  
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th></th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
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<tr>
<td>1. AKNS</td>
<td>11/14/14</td>
<td>Maria Williams on 11/1/14</td>
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<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
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</tbody>
</table>

**Initiator Name (typed):** Medeia Csoba DeHass  
Initiator Signed Initials: _________  
Date: __________________

**13b. Coordination Email**  
Date: 1/20/2015  
Submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

**13c. Coordination with Library Liaison**  
Date: 11/14/14

**14. General Education Requirement**  
Mark appropriate box:  
☐ Oral Communication  
☐ Written Communication  
☐ Quantitative Skills  
☐ Humanities  
☐ Fine Arts  
☐ Social Sciences  
☐ Natural Sciences  
☐ Integrative Capstone

**15. Course Description**  
(Suggested length 20 to 50 words)  
Introduces research methods that are informed by Indigenous ways of producing and sharing knowledge, ethical considerations, collaborative research design with Indigenous communities and peoples, the sharing of research materials and outcomes, multivocal authorship, learning to integrate responsibilities as a researcher, and the respect for cultural property rights and ownership.

**16a. Course Prerequisite(s)**  
(list prefix and number or test code and score)  
AKNS A201 OR ANTH 200 OR ANTH 335 (with minimum grade of C)

**16b. Co-requisite(s)** (concurrent enrollment required)  
n/a

**16c. Automatic Restriction(s)**  
☐ College  
☐ Major  
☐ Class  
☐ Level

**16d. Registration Restriction(s)** (non-codable)

**17. ☒ Mark if course has fees**  
☐ Mark if course is a selected topic course

**19. Justification for Action**  
Decolonizing Methodologies courses are now an expected course in Anthropology, Indigenous, and ethnic studies programs.

**Initiator (faculty only)**  
Medeia Csoba DeHass  
Initiator (TYPE NAME)  
Date

**Initiator Signed Initials:** _________  
Date: __________________

**Dean/Director of School/College**  
☑ Approved  
☐ Disapproved  
Date

**Undergraduate/Graduate Academic Board Chair**  
☑ Approved  
☐ Disapproved  
Date

**Provost or Designee**  
☑ Approved  
☐ Disapproved  
Date

**102**
I. Date Initiated
   March 23, 2015

II. Course Information
   College/School: College of Arts and Sciences
   Department: Anthropology
   Program: Anthropology
   Course Title: Decolonizing Methodologies
   Course Number: ANTH A461
   Credits: 3
   Contact Hours: 3 + 0
   Grading Basis: A-F
   Course Description: Introduces research methods that are informed by Indigenous ways of producing and sharing knowledge, ethical considerations, collaborative research design with Indigenous communities and peoples, the sharing of research materials and outcomes, multivocal authorship, learning to integrate responsibilities as a researcher, and the respect for cultural property rights and ownership.
   Cross Listing: Yes, with AKNS A461
   Course Prerequisites: AKNS A201 OR ANTH A200 OR ANTH 335 (with a minimum grade of C)
   Registration Restrictions: None
   Fees: Yes

III. Course Activities
    In general, the course will involve a combination of:
    A. Lectures
    B. Discussions
    C. Guest speakers
    D. Student research design

IV. Course Level Justification
    This 400-level class provides an in-depth examination of decolonizing research methods. Students will be required to analyze collaborative research design with Indigenous communities and peoples, to apply ethical considerations in their own work, to develop ways of sharing research materials and outcomes, to integrate responsibilities as a researchers with respect for cultural property rights and ownership, and to elaborate on these methods within their own fields of study.

V. Course Outline
    This upper division course will introduce students to the history of scientific research and Indigenous knowledge systems through lectures, reading, class discussions and
guest lecturers. Students will be required to create a final research project. The course materials include significant reading and discussion.

1. Overview of history of scientific research. What are Indigenous methodologies?
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4. Virtual Representations of Indigenous peoples
5. History/Ethnohistory
6. Anthropology and Archaeology
7. Museums and Institutional Collections
8. Natural Sciences
9. Ecology
10. Health
11. Education
12. Psychology
13. Business/Economy

VI. Instructional Goals and Student Learning Outcomes

A. Instructional Goals.

The instructor will:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1.</td>
<td>Engage students through lecture and discussion on the history of scientific research and Indigenous knowledge systems.</td>
</tr>
<tr>
<td>2.</td>
<td>Assist students in analyzing, processing, and applying course material related to Indigenous paradigms of research methods through providing feedback on reflection papers, and moderating online and in-class discussions.</td>
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<td>3.</td>
<td>Advise students on selecting a research topic and guide them in locating research sources pertaining to their class projects.</td>
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B. Student Learning Outcomes.

Students will be able to:

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2. Describe, analyze, compare, and critically evaluate Euro-American and Indigenous paradigms of research methods, producing knowledge, and sharing research outcomes. Exams, in-class exercises, and class discussions.

3. Articulate and apply Indigenous and non-Indigenous research methods to interpret and present traditional Indigenous knowledge and scientific research results as complementary and not competing bodies of understanding of the world. Exams, discussions, individual student research project.

4. Recognize and acknowledge personal bias and use the skills and concepts learned in this course to apply critical self-reflection regarding professional roles in collaboration with Indigenous communities. Class discussions, papers, presentations.

VIII. Suggested Text


IX. Bibliography


## Program/Prefix Action Request

University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Department</th>
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<tr>
<td>AS CAS</td>
<td>Anthropology</td>
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<table>
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<th>2. Complete Program Title/Prefix</th>
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<tr>
<td>ANTH B.A.</td>
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<td>Choose one from the appropriate drop down menu:</td>
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<tr>
<td>Undergraduate: or</td>
</tr>
<tr>
<td>Bachelor of Arts or</td>
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<td>Graduate:</td>
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<td>□ Inactivate</td>
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<tr>
<td>From: 08/2015</td>
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<td>To: /</td>
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<tr>
<th>6a. Coordination with Affected Units</th>
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<tbody>
<tr>
<td>Department, School, or College: Alaska Native Studies</td>
</tr>
<tr>
<td>Initiator Name (typed): Medeia Csoba DeHass</td>
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<tr>
<td>Initiator Signed Initials: _________</td>
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<td>Date: __________________</td>
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| 6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) | Date: 1/20/2015 |
|--------------------------------------------------------------------------------------------|

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<tbody>
<tr>
<td>Medeia Csoba DeHass</td>
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<th>Disapproved</th>
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Dean/Director of School/College | Date |
|--------------------------------|------|

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Undergraduate/Graduate Academic Board Chair | Date |
|-------------------------------------------|------|

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<tr>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
</table>

Provost or Designee | Date |
|--------------------|------|

---

106
Admission Requirements
Satisfy the Application and Admission Requirements for Baccalaureate Degrees.

Graduation Requirements

- Satisfy the General University Requirements for Baccalaureate Degrees.
- Complete the General Education Requirements for Baccalaureate Degrees.
- Complete the College of Arts and Sciences Requirements.
- Complete the Major Requirements below.

Major Requirements

Core Courses *
Select three of the following: 9

ANTH A202 Cultural Anthropology
ANTH A205 Biological Anthropology
ANTH A210 Introduction to Linguistic Anthropology
ANTH A211 Fundamentals of Archaeology

Complete the following courses: 3

ANTH A250 The Rise of Civilization
ANTH A410 History of Anthropology

Ethnographic Area Courses *
Select three of the following: 9

ANTH A200 Natives of Alaska
ANTH A325 Cook Inlet Anthropology
ANTH A335 Native North Americans
ANTH A336 Peoples and Cultures of South America
ANTH A338 Peoples and Cultures of Scandinavia
ANTH A427 Ethnohistory of Alaska Natives
ANTH A429 Contemporary Alaska Native Society 1940 - Present
ANTH A434 Peoples and Cultures of Northeast Asia
ANTH A435 Northwest Coast Cultures
ANTH A436 Aleut Adaptations
ANTH A437 Eskimo Adaptations
ANTH A438 Tlingit and Haida Adaptations
ANTH A439 Athabascan Adaptations

Of the following ethnographic area courses which emphasize archaeology, no more than 6 credits can be used to satisfy the ethnographic area requirement:

ANTH A312 North American Archaeology
ANTH A413     Peopling of the Americas
ANTH A416     Arctic Archaeology

Topical/Theoretical Courses *
Select two of the following: **  6

ANTH A270     Women in Cross-Cultural Perspective
ANTH A324     Psychological Anthropology
ANTH A354     Culture and Ecology
ANTH A360     Anthropology of Art
ANTH A361     Language and Culture
ANTH A365     Modern Human Biological Diversity
ANTH A375     Introduction to Cultural Resource Management
ANTH A400     Anthropology of Religion
ANTH A415     Applied Anthropology
ANTH A425     Archaeology of Identity
ANTH A432     Hunting and Gathering Societies
ANTH A445     Evolution of Humans and Disease
ANTH A455     Medical Anthropology
ANTH A457     Food and Nutrition: An Anthropological Perspective
ANTH A460     Peace, War, and Violence: An Anthropological Perspective

AKNS/ANTH A461     Decolonizing Methodologies

ANTH A476     Ethical Issues in Archaeology
ANTH A480     Analytical Techniques in Archaeology
ANTH A481     Museum Studies in Anthropology
ANTH A482     Historical Archaeology
ANTH A484     Lithic Technology
ANTH A485     Human Osteology
ANTH A486     Applied Human Osteology

Anthropology Electives *
Any 6 credits in Anthropology  6

Statistics Courses

Select one of the following:  3-

STAT A252     Elementary Statistics
STAT A253     Applied Statistics for the Sciences
STAT A307     Probability and Statistics

* Complete 36 credits from these items, 18 of which must be upper division credits.
The upper division special topics course (ANTH A490) or independent study courses (ANTH A397, ANTH A497) may be petitioned to satisfy ethnographic area or topical/theoretical course requirements, depending on course content.

A minimum of 120 credits is required for the degree, of which 42 credits must be upper division.

**Honors in Anthropology**

The award of honors in Anthropology recognizes outstanding achievement by undergraduate majors in the study of anthropology. To be eligible for departmental honors, a student must satisfy the following requirements:

1. Be a declared Anthropology major.
2. Satisfy all of the requirements for a BA or BS degree in Anthropology.
3. Meet the requirements for Graduation with Honors.
4. Earn a grade point average of 3.50 or above in courses specific to the Anthropology major.
5. Complete a senior thesis project (taken as ANTH A499), based on library, laboratory or field research resulting in a substantial, thesis-quality paper defended before the Anthropology faculty. The course may be taken on a one-semester (3-credit) or two-semester (6-credit) basis.

See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/cas/anthropology/ba-anthropology/#sthash.W1jKqvno.dpuf
<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>Anthropology</td>
</tr>
</tbody>
</table>

2. Complete Program Title/Prefix
ANTH B.S.

3. Type of Program
Choose one from the appropriate drop down menu:
Undergraduate: or Graduate: Bachelor of Science

This program is a Gainful Employment Program: □ Yes or □ No

4. Type of Action:
PROGRAM
☐ Add
☑ Change
☐ Delete

PREFIX
☐ Add
☐ Change
☐ Inactivate

5. Implementation Date (semester/year)
From: 08/2015 To: /

6a. Coordination with Affected Units
Department, School, or College: Alaska Native Studies
Initiator Name (typed): Medeia Csoba DeHass
Initiator Signed Initials: ___________
Date: ___________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu) Date: 1/20/2015

6c. Coordination with Library Liaison Date: 11/14/2014

7. Title and Program Description - Please attach the following:
☐ Cover Memo
☐ Catalog Copy in Word using the track changes function. *
*Copy the text directly from the program website of the online catalog and paste into a Word document.

8. Justification for Action
Decolonizing Methodologies courses are now an expected course in Anthropology, Indigenous, and ethnic studies programs.

Initiator (faculty only) Medeia Csoba DeHass
Initiator (TYPE NAME) ___________
Date ___________

☐ Approved
☐ Disapproved
Dean/Director of School/College ___________
Date ___________

☐ Approved
☐ Disapproved
Undergraduate/Graduate Academic Board Chair ___________
Date ___________

☐ Approved
☐ Disapproved
Provost or Designee ___________
Date ___________

☐ Approved
☐ Disapproved
Department Chair ___________
Date ___________

☐ Approved
☐ Disapproved
College/School Curriculum Committee Chair ___________
Date ___________
Bachelor of Science in Anthropology

- **Overview**
- **Learning Outcomes**

**Admission Requirements**
Satisfy the [Application and Admission Requirements for Baccalaureate Degrees](#).

**Graduation Requirements**
- Satisfy the [General University Requirements for Baccalaureate Degrees](#).
- Complete the [General Education Requirements for Baccalaureate Degrees](#).
- Complete the [College of Arts and Sciences Requirements](#).
- Complete the Major Requirements below.

**Major Requirements**

**Core Courses**
Select three of the following: 9

- **ANTH A202** Cultural Anthropology
- **ANTH A205** Biological Anthropology
- **ANTH A210** Introduction to Linguistic Anthropology
- **ANTH A211** Fundamentals of Archaeology

Complete the following courses:
- **ANTH A250** The Rise of Civilization 3
- **ANTH A410** History of Anthropology 3

**Ethnographic Area Courses**
Complete three of the following: 9

- **ANTH A200** Natives of Alaska
- **ANTH A325** Cook Inlet Anthropology
- **ANTH A335** Native North Americans
- **ANTH A336** Peoples and Cultures of South America
- **ANTH A338** Peoples and Cultures of Scandinavia
- **ANTH A427** Ethnohistory of Alaska Natives
- **ANTH A429** Contemporary Alaska Native Society 1940 - Present
- **ANTH A434** Peoples and Cultures of Northeast Asia
- **ANTH A435** Northwest Coast Cultures
- **ANTH A436** Aleut Adaptations
- **ANTH A437** Eskimo Adaptations
- **ANTH A438** Tlingit and Haida Adaptations
- **ANTH A439** Athabascan Adaptations

Of the following ethnographic area courses which emphasize archaeology, no more than 6 credits can be used to satisfy the ethnographic area requirement:

- **ANTH A312** North American Archaeology
- **ANTH A413** Peopling of the Americas
- **ANTH A416** Arctic Archaeology

**Topical/Theoretical Courses**
Select two of the following: 6

**ANTH**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH A270</td>
<td>Women in Cross-Cultural Perspective</td>
</tr>
<tr>
<td>ANTH A324</td>
<td>Psychological Anthropology</td>
</tr>
<tr>
<td>ANTH A354</td>
<td>Culture and Ecology</td>
</tr>
<tr>
<td>ANTH A360</td>
<td>Anthropology of Art</td>
</tr>
<tr>
<td>ANTH A361</td>
<td>Language and Culture</td>
</tr>
<tr>
<td>ANTH A365</td>
<td>Modern Human Biological Diversity</td>
</tr>
<tr>
<td>ANTH A375</td>
<td>Introduction to Cultural Resource Management</td>
</tr>
<tr>
<td>ANTH A400</td>
<td>Anthropology of Religion</td>
</tr>
<tr>
<td>ANTH A415</td>
<td>Applied Anthropology</td>
</tr>
<tr>
<td>ANTH A425</td>
<td>Archaeology of Identity</td>
</tr>
<tr>
<td>ANTH A432</td>
<td>Hunting and Gathering Societies</td>
</tr>
<tr>
<td>ANTH A445</td>
<td>Evolution of Humans and Disease</td>
</tr>
<tr>
<td>ANTH A455</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>ANTH A457</td>
<td>Food and Nutrition: An Anthropological Perspective</td>
</tr>
<tr>
<td>ANTH A460</td>
<td>Peace, War, and Violence: An Anthropological Perspective</td>
</tr>
<tr>
<td>/AKNSANTH A461</td>
<td>Decolonizing Methodologies</td>
</tr>
</tbody>
</table>

Anthropology Electives *
Any 6 credits in Anthropology

Statistics Courses
Select one of the following:

**STAT A253** Applied Statistics for the Sciences

or **STAT A307** Probability and Statistics

*Complete 36 credits from these items, 18 of which must be upper division credits.
The upper division special topics course (ANTH A490) or independent study courses (ANTH A397, ANTH A497) may be petitioned to satisfy ethnographic area or topical/theoretical

**course requirements, depending on course content.

A minimum of 120 credits is required for the degree, of which 42 credits must be upper division.

**Honors in Anthropology**

The award of honors in Anthropology recognizes outstanding achievement by undergraduate majors in the study of anthropology. To be eligible for departmental honors, a student must satisfy the following requirements:

1. Be a declared Anthropology major.
2. Satisfy all of the requirements for a BA or BS degree in Anthropology.
3. Meet the requirements for [Graduation with Honors](#).
4. Earn a grade point average of 3.50 or above in courses specific to the Anthropology major.
5. Complete a senior thesis project (taken as ANTH A499), based on library, laboratory or field research resulting in a substantial, thesis-quality paper defended before the Anthropology faculty. The course may be taken on a one-semester (3-credit) or two-semester (6-credit) basis.

- See more at: http://catalog.uga.alaska.edu/undergraduateprograms/cas/anthropology/bs-anthropology/#sthash.l1bzocQs.dpuf
Date: February 11, 2015

To: Members of the Undergraduate Academic Board

From: J. Ellen McKay, Professor
Architectural and Engineering Technology

Subject: Modifications to the Architectural & Engineering Technology Program

Background:
The Architectural and Engineering Technology (AET) program was developed 30 years ago with input from local architects and engineers. In 2000, the AET Department revised its curriculum to represent current professional practices, employer attitudes, and to reflect technological advances in the field of architectural and engineering technology. The new curriculum was implemented beginning in Fall/01. After the development of the Associate of Applied Science degree program in Construction Management (AAS-CM) which cross-lists several AET courses, there was another revision in 2003 to correct awkwardness in course content, correct errors and oversights, and to ensure compatibility between the AET and CM programs. Curriculum actions in 2005 and 2011 made some additional tweaks to the program regarding prerequisites and a math requirement. The Occupational Endorsement Certificate in CADD for Building Construction was also added in 2006 at the request of the college administration.

Summary of Actions:
The AET Department currently offers a total of 16 courses towards 4 undergraduate certificates, an occupational endorsement certificate, and an Associate of Applied Science degree. This curriculum action will, with few exceptions, affect the entire program. This revision proposes to:

- delete the OEC in CADD for Building Construction,
- delete AET A282 and AET A283,
- uncross-list AET A101 and CM A101, AET A102 and CM A102, AET A123 and CM A123, AET A142 and CM A142, and AET A231 and CM A231,
- rename AET A111, AET A121, AET A131, and AET A143,
- add AET A111 as a prerequisite to AET A213
- update most course bibliographies,
- rename the 4 undergraduate certificates,
- change the course description and student outcomes wording for the renamed courses,
- change the program outcomes wording for the 4 undergraduate certificates and the AAS.

Justification:
The occupational endorsement certificate is being deleted due to lack of student interest. AET A282 and A283 are only required for the OEC and, therefore, being deleted as well. The content of these two courses could be offered as ‘selected topics’ as required. The AET and CM courses are being uncross-listed to simplify course sections and coding. AET A111 is being restored as a prerequisite to AET A213 (it was dropped when it was cross-listed with CM A213). Renaming of courses and certificates, and wording changes are as a result of conversations with the AET Advisory Committee. They are being revised to reflect current industry terminology.

Please contact me with any questions. I can be reached at 786-6424 or jemckay@uaa.alaska.edu.
## Course Action Request

### University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
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</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET</td>
<td>A101</td>
<td>N/A</td>
<td>4 cr.</td>
<td>(Lecture + Lab)</td>
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<table>
<thead>
<tr>
<th>6. Complete Course Title</th>
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</thead>
<tbody>
<tr>
<td>Fundamentals of CADD for Building Construction</td>
</tr>
<tr>
<td>Fund. of CADD for Bldg. Const.</td>
</tr>
<tr>
<td>Abbreviated Title for Transcript (30 character)</td>
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</table>

| 7. Type of Course | | 8. Type of Action: | | 9. Repeat Status No | | 10. Grading Basis |
|-------------------|------------------|-------------------|-------------------|-------------------|------------------|
| Academic          | Add              | Change            | Delete            | N/A               | A-F              |
| Preparatory/Development | Non-credit | CEU               | Professional Development |

<table>
<thead>
<tr>
<th>11. Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>From: Fall/2015 To: 9999</td>
</tr>
</tbody>
</table>

| 12. Cross Listed with | | 13a. Impacted Courses or Programs: |
|----------------------|------------------|
| Stacked              | List any programs or college requirements that require this course. |

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.ualaska.edu/governance.

**Impacted Program/Course**

<table>
<thead>
<tr>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>See attached spreadsheet.</td>
<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>13a. Impacted Courses or Programs:</td>
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<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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</table>

**Initiator Name (typed):** J. Ellen McKay  
**Initiator Signed Initials:**  
**Date:**

<table>
<thead>
<tr>
<th>13b. Coordination Email</th>
<th>13c. Coordination with Library Liaison</th>
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</thead>
<tbody>
<tr>
<td>submitted to Faculty Listserv: (<a href="mailto:uaa-faculty@lists.ualaska.edu">uaa-faculty@lists.ualaska.edu</a>)</td>
<td>Date: 2/10/15</td>
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<table>
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<tr>
<td>Mark appropriate box:</td>
<td>Oral Communication</td>
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<tr>
<td></td>
<td>Written Communication</td>
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<tr>
<td></td>
<td>Quantitative Skills</td>
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<tr>
<td></td>
<td>Humanities</td>
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<td></td>
<td>Fine Arts</td>
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<td></td>
<td>Social Sciences</td>
</tr>
<tr>
<td></td>
<td>Natural Sciences</td>
</tr>
<tr>
<td></td>
<td>Integrative Capstone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Course Description (suggested length 20 to 50 words)</th>
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<tbody>
<tr>
<td>Introduces basic CADD (computer-aided drafting and design) skills necessary in civil, architectural, structural, mechanical and electrical modeling within the construction industry. Defines the working relationship between design and construction professionals and technicians.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16a. Course Prerequisite(s) (list prefix and number or test code and score)</th>
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<tbody>
<tr>
<td>MATH A105 with a minimum grade of C or concurrent enrollment.</td>
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<table>
<thead>
<tr>
<th>16b. Co-requisite(s) (concurrent enrollment required)</th>
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<td>N/A</td>
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<th>16c. Automatic Restriction(s)</th>
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<td>College</td>
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<table>
<thead>
<tr>
<th>16d. Registration Restriction(s) (non-codable)</th>
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<tr>
<td>Proof of eligibility for placement into ENGL A111. Appropriate SAT, ACT, or UAA-approved Math Placement Test scores may be used in lieu of MATH A105.</td>
</tr>
</tbody>
</table>

| 17. | 18. |
| Mark if course has fees | Mark if course is a selected topic course |

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course and CM A101 are being uncross listed to simplify course sections and coding. Update course description, CCG, and Catalog Copy.</td>
</tr>
<tr>
<td>Initiator (faculty only)</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>J. Ellen McKay</td>
</tr>
<tr>
<td>Initiator (TYPE NAME)</td>
</tr>
<tr>
<td>□ Approved</td>
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<td>□ Disapproved</td>
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<table>
<thead>
<tr>
<th>Department Chair</th>
<th>Date</th>
<th>Undergraduate/Graduate Academic</th>
<th>Date</th>
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<thead>
<tr>
<th>College/School Curriculum Committee Chair</th>
<th>Date</th>
<th>Provost or Designee</th>
<th>Date</th>
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</tbody>
</table>

116
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A101
D. Number of Credits & Contact Hours: 4 (2+4)
E. Course Title: Fundamentals of CADD for Building Construction
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Introduces basic CADD (computer-aided drafting and design) skills necessary in civil, architectural, structural, mechanical and electrical modeling within the construction industry. Defines the working relationship between design and construction professionals and technicians.
K. Course Attributes: N/A
L. Course Prerequisites: MATH A105 with a minimum grade of C or concurrent enrollment
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: Proof of eligibility for placement into ENGL A111. Appropriate SAT, ACT, or UAA approved Math Placement Test scores may be used in lieu of MATH A105.

M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. **Instructional Goals, Student Learning Outcomes and Assessment Measures.**

A. **Instructional Goal:** Introduce basic computer-aided drafting and design (CADD) skills necessary in civil, architectural, structural, mechanical and electrical drafting in the design and construction industry.

B. **Student Learning Outcomes and Assessment Measures:**

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Explain the working relationships and primary roles of the participants in the construction process.</td>
<td>Written examination</td>
</tr>
<tr>
<td>2. Describe how construction drawings and their accompanying written specifications are coordinated for a single project.</td>
<td>Written examination</td>
</tr>
<tr>
<td>3. Explain construction drawing set organization including drawing subsets (civil/site, architectural, structural, mechanical, electrical, and others as required by the needs of the project), the information conveyed by each subset, and how the subsets are related.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>4. Define the basic commands and techniques used with CADD software, including file, draw, edit, modify, insert, format, dimension, and text commands.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>5. Compute drawing scales for blocks, line type, hatch, and plotting in CADD.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>6. Produce civil/site development drawings, architectural drawings, mechanical drawings, structural drawings, and electrical drawings using CADD software.</td>
<td>CADD projects</td>
</tr>
<tr>
<td>7. Apply drafting conventions, including: drawing sheet sizes, sheet numbering, drawing sheet layout, line types, drawing views, dimensions, coordinate systems, scales, symbols, hatching, notation, basic terminology, and abbreviations used in architectural, civil, mechanical, electrical, and structural drawings.</td>
<td>Written examination and CADD projects</td>
</tr>
</tbody>
</table>
V.  **Topical Course Outline**

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Participants in Construction
   2.1 Owners
   2.2 Design team
   2.3 Construction team
   2.4 Regulatory agents

3.0 Construction Drawings
   3.1 Use and role
   3.2 National CADD Standard
   3.3 Sheet sizes, layout and numbering
   3.4 Coordination with written specifications
   3.5 Drawing subsets
   3.6 Drawing views and orthographic projection

4.0 CADD Command Structure
   4.1 File commands
   4.2 Draw and edit commands
   4.3 Modify commands
   4.4 Insert and format commands
   4.5 Dimension and text commands
   4.6 Blocks
   4.7 Scaling
   4.8 Plotting

5.0 Civil/Site Development Modeling
   5.1 Use and role
   5.2 Reading/interpretation and line types
   5.3 Plats, plot plans, as-buils
   5.4 Topography
   5.5 Civil engineering dimensioning
   5.6 Terminology, symbols and abbreviations

6.0 Architectural Modeling
   6.1 Use and role
   6.2 Reading/interpretation and line types
   6.3 Schedules
   6.4 Architectural dimensioning
   6.5 Terminology, symbols and abbreviations

7.0 Structural Modeling
   7.1 Use and role
   7.2 Reading/interpretation and line types
   7.3 Structural dimensioning
   7.4 Terminology, symbols and abbreviations

8.0 Mechanical Modeling
   8.1 Use and role
   8.2 Reading/interpretation and line types
   8.3 Plumbing
8.4 HVAC
8.5 Schedules
8.6 Terminology, symbols and abbreviations

9.0 Electrical Modeling
9.1 Use and role
9.2 Reading/interpretation and line types
9.3 Electrical system components
9.4 Schematic and plan layouts
9.5 Schedules
9.6 Terminology, symbols and abbreviations

10.0 Projection
10.1 Projection theory: observer, projection plane, and object
10.2 Projection types

11.0 Drawing sheet organization and schedules
11.1 Drawing area and title blocks
11.2 Production drawing area
11.3 Drawing coordinate systems
11.4 Cover sheets
11.5 Schedule formats, heading, and content

VI. Suggested Texts


VII. Bibliography


*Denotes classic text.
<table>
<thead>
<tr>
<th>Impacted Program or Course</th>
<th>Date of Notification</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS in AET</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>OEC in CAD</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Architectural Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Civil Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Mechanical and Electrical Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Structural Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>AET A123</td>
<td>2/9/15</td>
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<td>2/9/15</td>
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<td>CM A163</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>CM A201</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>CM A213</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>CM A231</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Welding</td>
<td>2/23/15</td>
<td>Lorraine Stewart</td>
</tr>
<tr>
<td>Undergraduate Certificate, Construction Technology</td>
<td>2/23/15</td>
<td>Lorraine Stewart</td>
</tr>
<tr>
<td>AAS in Technology</td>
<td>2/23/15</td>
<td>Lorraine Stewart</td>
</tr>
</tbody>
</table>
# Course Action Request

## University of Alaska Anchorage

**Proposal to Initiate, Add, Change, or Delete a Course**

## Course Information

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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</thead>
<tbody>
<tr>
<td>AET</td>
<td>A102</td>
<td>N/A</td>
<td>3 cr.</td>
<td>(3+0)</td>
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</table>

## Course Details

**Complete Course Title**
Methods of Building Construction

**Abbreviated Title for Transcript (30 character)**
Methods of Bldg. Const.

**Type of Course**
Academic

**Type of Action:**
Add

**Course Description**
Introduces basic knowledge of building materials, systems, and assemblies. Includes site work, structural systems, and construction document interpretation. Includes a field project involving student team research of a current building type.

**Course Prerequisite(s)**
N/A

**Course Prerequisite(s) (list prefix and number or test code and score)**
N/A

**Co-requisite(s) (concurrent enrollment required)**
N/A

**Registration Restriction(s) (non-codable)**
Proof of eligibility for placement into ENGL A111 and MATH 105.

**Mark if course has fees**

**Mark if course is a selected topic course**

## Impacted Courses or Programs

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): J. Ellen McKay
Initiator Signed Initials: _________
Date:________________

## Justification for Action

This course and CM A102 are being uncross listed to simplify course sections and coding. Update course description, CCG, and Catalog Copy.

Initiator (faculty only)
J. Ellen McKay

Initiator (TYPE NAME)

[Approval Options]

Approved: Dean/Director of School/College Date

Disapproved: Date

[Approval Options]

Approved: Undergraduate/Graduate Academic Date

Disapproved: Date

Approved: Provost or Designee Date

[Approval Options]
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A102
D. Number of Credits & Contact Hours: 3 (3+0)
E. Course Title: Methods of Building Construction
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Introduces basic knowledge of building materials, systems, and assemblies. Includes site work, structural systems, and construction document interpretation. Includes a field project involving student team research of a current building type.
K. Course Attributes: N/A
L. Course Prerequisites: N/A
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: Proof of eligibility for placement into MATH 105 and ENGL A111.
M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: Introduce basic knowledge of building materials, systems and assemblies to entry-level technicians and construction managers.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Describe the roles and responsibilities of individuals in the selection of materials,</td>
<td>Written examination, oral presentation, and written report</td>
</tr>
<tr>
<td>techniques and methods used in the design and construction process.</td>
<td></td>
</tr>
<tr>
<td>2. Interpret construction drawings and written technical specifications for construction</td>
<td>Written examination and class project</td>
</tr>
<tr>
<td>materials and methods.</td>
<td></td>
</tr>
<tr>
<td>3. Identify soil types and subsurface investigation techniques for building site improvements and building foundation design.</td>
<td>Written examination</td>
</tr>
<tr>
<td>4. Describe concrete, steel, wood, reinforced masonry, and composite building structural systems, and methods and techniques of construction.</td>
<td>Written examination</td>
</tr>
<tr>
<td>5. Identify ferrous and non-ferrous metals used in construction materials.</td>
<td>Written examination</td>
</tr>
<tr>
<td>6. Describe materials and techniques for thermal and moisture protection of buildings including, roofing, insulation and exterior cladding/closure.</td>
<td>Written examination</td>
</tr>
<tr>
<td>7. Identify door and window materials, products and systems used for ingress, egress, day lighting and security.</td>
<td>Written examination</td>
</tr>
<tr>
<td>8. Describe the materials, products, and systems used for interior walls, ceilings and finish floor construction.</td>
<td>Written examination</td>
</tr>
<tr>
<td>10. Identify building interior features including architectural elements, conveyance systems (elevators, escalators), and the structural elements associated with them.</td>
<td>Written examination</td>
</tr>
</tbody>
</table>
V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Emergency egress review

2.0 Construction Industry Overview
   2.1 Design professionals
   2.2 Construction contractors
   2.3 Product manufactures
   2.4 Manufacturing standards

3.0 Construction Documents
   3.1 Construction drawing organization and interpretation
   3.2 Written technical specifications
   3.3 Coordination of drawings and specifications
   3.4 Construction Specifications Institute MasterFormat

4.0 Building Structures and Material Properties
   4.1 Building structural systems
   4.2 Building equipment systems
   4.3 Properties of materials
   4.4 Forces

5.0 Sitework
   5.1 Soils
   5.2 Subsurface investigation
   5.3 Site drainage
   5.4 Earthwork
   5.5 Foundations
   5.6 Site improvements

6.0 Concrete
   6.1 Composition and mix design
   6.2 Formwork
   6.3 Reinforced concrete structural systems
   6.4 Testing and curing
   6.5 Post-tensioning/pre-stressing

7.0 Masonry
   7.1 Clay masonry
   7.2 Brick
   7.3 Stone
   7.4 Reinforced masonry unit structural systems

8.0 Metals
   8.1 Ferrous metals
   8.2 Non-ferrous metals
   8.3 Metal finishes
   8.4 Structural steel systems
   8.5 Lightweight metal systems
   8.6 Open-web joists
   8.7 Metal decking
   8.8 Miscellaneous metal fabrications
9.0 Wood
   9.1 Species, strength and grading
   9.2 Light wood framing construction
   9.3 Heavy timber construction
   9.4 Manufactured wood products
   9.5 Wood preservation
   9.6 Finish wood work
10.0 Thermal and Moisture Protection
    10.1 Damp proofing and weatherproofing
    10.2 Exterior cladding systems
    10.3 Roofing systems
    10.4 Flashing and joints
    10.5 Building insulation
11.0 Doors and Windows
    11.1 Glazing materials
    11.2 Doors and finish hardware
    11.3 Window materials
    11.4 Fire doors
12.0 Finishes
    12.1 Interior walls, partitions, and ceilings
    12.2 Gypsum wall board and plaster
    12.3. Flooring and carpet
13.0 Building Specialties and Conveying Equipment
    13.1 Architectural specialties
    13.2 Elevators
    13.3 Escalators
14.0 Field Team Project
    14.1 Information gathering
    14.2 Written report
    14.3 Oral/visual presentations

VI. Suggested Texts


VII. Bibliography


*Denotes classic text.
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<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>OEC in CAD</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Architectural Technology</td>
<td>2/9/15</td>
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</tr>
<tr>
<td>Undergraduate Certificate, Civil Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Mechanical and Electrical Technology</td>
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<td>Donald M. Ketner, Jr.</td>
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<tr>
<td>Undergraduate Certificate, Structural Technology</td>
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<tr>
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<td>2/9/15</td>
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<td>2/9/15</td>
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<td>AET A131</td>
<td>2/9/15</td>
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<tr>
<td>AET A142</td>
<td>2/9/15</td>
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<td>2/9/15</td>
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<td>Donald M. Ketner, Jr.</td>
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<td>2/9/15</td>
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# Course Action Request

**University of Alaska Anchorage**  
Proposal to Initiate, Add, Change, or Delete a Course

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<td>AET</td>
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<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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<tbody>
<tr>
<td>AET</td>
<td>A111</td>
<td>N/A</td>
<td>3 cr.</td>
<td>(2+3)</td>
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<table>
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<th>6. Complete Course Title</th>
<th>Abbreviated Title for Transcript (30 character)</th>
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<tr>
<td>Civil Construction Drawings</td>
<td>Civil Construction Drawings</td>
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<tr>
<th>7. Type of Course</th>
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<tbody>
<tr>
<td>☒ Academic</td>
<td>☐ Preparatory/Development</td>
<td>☐ Non-credit</td>
</tr>
<tr>
<td>☐ CEU</td>
<td>☐ Professional Development</td>
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| 8. Type of Action: | ☐ Add | ☒ Change | ☐ Delete |

If a change, mark appropriate boxes:
- ☐ Prefix
- ☐ Course Number
- ☑ Title
- ☐ Contact Hours
- ☐ Repeat Status
- ☐ Grading Basis
- ☐ Cross-Listed/Stacked
- ☐ Course Description
- ☐ Course Prerequisites
- ☐ Test Score Prerequisites
- ☐ Co-requisites
- ☐ Automatic Restrictions
- ☐ Registration Restrictions
- ☐ General Education Requirement
- ☐ Class
- ☐ Major
- ☐ Level
- ☑ Other CCG, Catalog Copy (please specify)

<table>
<thead>
<tr>
<th>9. Repeat Status</th>
<th># of Repeats</th>
<th>Max Credits</th>
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| 10. Grading Basis | ☑ A-F | ☐ P/NP | ☐ NG |

<table>
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<tr>
<th>11. Implementation Date</th>
<th>semester/year</th>
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<tr>
<td>From: Fall 2015/</td>
<td>To: 9999</td>
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<table>
<thead>
<tr>
<th>12.</th>
<th>☐ Cross Listed with</th>
<th>☐ Stacked with</th>
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<tr>
<td></td>
<td></td>
<td>Cross-Listed Coordination Signature</td>
</tr>
</tbody>
</table>

13a. **Impacted Courses or Programs:** List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

**Initiator Name (typed):** J. Ellen McKay  
**Initiator Signed Initials:** _________  
**Date:** __________

<table>
<thead>
<tr>
<th>13b. Coordination Email</th>
<th>Date: 2/11/15</th>
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</thead>
<tbody>
<tr>
<td>submitted to Faculty Listserv:</td>
<td>(<a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a>)</td>
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</tbody>
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<table>
<thead>
<tr>
<th>13c. Coordination with Library Liaison</th>
<th>Date: 2/10/15</th>
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<table>
<thead>
<tr>
<th>14. General Education Requirement</th>
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<tbody>
<tr>
<td>Mark appropriate box:</td>
<td></td>
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<tr>
<td>☐ Oral Communication</td>
<td>☐ Written Communication</td>
</tr>
<tr>
<td>☐ Fine Arts</td>
<td>☐ Quantitative Skills</td>
</tr>
<tr>
<td>☐ Social Sciences</td>
<td>☐ Humanities</td>
</tr>
<tr>
<td>☐ Natural Sciences</td>
<td>☐ Integrative Capstone</td>
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</table>

<table>
<thead>
<tr>
<th>15. Course Description (suggested length 20 to 50 words)</th>
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</table>

Introduces technical skills needed by technicians to work with civil engineers and surveyors. Includes office practices, staff relationships, and civil drawing production. Develops skills in modeling and mapping used in site development.

<table>
<thead>
<tr>
<th>16a. Course Prerequisite(s) (list prefix and number or test code and score)</th>
<th>16b. Co-requisite(s) (concurrent enrollment required)</th>
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<tbody>
<tr>
<td>AET A102 and AET A181</td>
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<thead>
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<th>16c. Automatic Restriction(s)</th>
<th>16d. Registration Restriction(s) (non-codable)</th>
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<tbody>
<tr>
<td>☐ College</td>
<td>☐ Major</td>
<td>☐ Class</td>
</tr>
<tr>
<td></td>
<td>NONE</td>
<td>NONE</td>
</tr>
</tbody>
</table>

| 17. ☐ Mark if course has fees | 18. ☐ Mark if course is a selected topic course |

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
<th></th>
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<tbody>
<tr>
<td>Updating terminology in course title and course description as per AET Advisory Committee and updating bibliography. Update Catalog Copy.</td>
<td></td>
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</tbody>
</table>

**Initiator (faculty only):** J. Ellen McKay  
**Initiator (TYPE NAME):** _________  
**Date:** __________

<table>
<thead>
<tr>
<th>☐ Approved</th>
<th>☐ Disapproved</th>
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<tbody>
<tr>
<td>Dean/Director of School/College</td>
<td>Date</td>
</tr>
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</table>

<table>
<thead>
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<th>☐ Disapproved</th>
</tr>
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<tbody>
<tr>
<td>Undergraduate/Graduate Academic</td>
<td>Date</td>
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<th>☐ Disapproved</th>
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<tr>
<td>Department Chair</td>
<td>Date</td>
</tr>
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<table>
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<tr>
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<th>☐ Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Chair</td>
<td>Date</td>
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</table>

<table>
<thead>
<tr>
<th>☐ Approved</th>
<th>☐ Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provost or Designee</td>
<td>Date</td>
</tr>
</tbody>
</table>
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A111
D. Number of Credits & Contact Hours: 3 (2+3)
E. Course Title: Civil Construction Drawings
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Introduces technical skills needed by technicians to work with civil engineers and surveyors. Includes office practices, staff relationships, and civil drawing production. Develops skills in modeling and mapping used in site development.
K. Course Attributes: N/A
L. Course Prerequisites: AET A102 and AET A181
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: N/A
M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: Introduce students to the workings of a professional civil engineering/surveying office.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Identify and explain the process of coordination that exists between the civil technician, civil engineer/surveyor, and other consultants.</td>
<td>Written examination and CADD (computer-aided design and drafting) projects</td>
</tr>
<tr>
<td>2. Define the use of time sheets, budgets, and cost accounting procedures.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>3. Exhibit a working vocabulary of civil terminology.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>4. Explain and identify acceptable standards, symbols and drawing conventions of mapping.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>5. Describe the use, preparation, and reproduction of civil drawings and civil specifications and their formats.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>6. Explain the basic concept of surveying as a process used to obtain information for making maps.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>7. Use various methods of contour interpolation to produce a topographic map.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>8. Describe the various methods of legally describing land in both written and graphic form.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>9. Differentiate between and produce plats, plot plans, preliminary and as-built plans using CADD.</td>
<td>Written examination and CADD projects</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Civil/Survey Design Team
   2.1 Role relationships
   2.2 Consultants
   2.3 Terminology
2.4 Timesheets and cost accounting

3.0 Map Concepts
   3.1 Line types
   3.2 Lettering
   3.3 Symbols
   3.4 Scale
   3.5 Source information
   3.6 Accuracy
   3.7 Units

4.0 Civil Drawing Set
   4.1 Vicinity map
   4.2 Existing conditions
   4.3 Site plan
   4.4 Grading plan
   4.5 Plan and profile

5.0 Surveying Fundamentals
   5.1 Location
   5.2 Direction
   5.3 Distance
   5.4 Coordinates
   5.5 Elevation
   5.6 Traversing
   5.7 Global positioning systems

6.0 Topography
   6.1 Contour lines
   6.2 Contour interval
   6.3 Interpolation
   6.4 Photogrammetry

7.0 Land Descriptions
   7.1 Lot & block
   7.2 Rectangular
   7.3 Metes and bounds
   7.4 Written

8.0 Plot Plans
   8.1 Preliminary
   8.2 As-built
   8.3 Plats

VI. Suggested Texts

VII. Bibliography


*Denotes classic text.
Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

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<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
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<tr>
<th>2. Course Prefix</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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<td>AET</td>
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<td>N/A</td>
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<table>
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<th>6. Complete Course Title</th>
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<tr>
<td>Architectural Construction Drawings</td>
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<td>Architectural Const. Drawings</td>
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<tr>
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<td>If a change, mark appropriate boxes:</td>
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<td>☐ Prefix</td>
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<td>☒ Title</td>
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</tr>
<tr>
<td>☒ Grading Basis</td>
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<td>☒ Course Description</td>
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<thead>
<tr>
<th>13a. Impacted Courses or Programs:</th>
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<tr>
<td>List any programs or college requirements that require this course.</td>
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<table>
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<tr>
<th>13b. Coordination Email</th>
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<table>
<thead>
<tr>
<th>13c. Coordination with Library Liaison</th>
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<th>14. General Education Requirement</th>
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<td>Mark appropriate box:</td>
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<tr>
<td>☐ Oral Communication</td>
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<td>☐ Written Communication</td>
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<tr>
<td>☐ Quantitative Skills</td>
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<td>☐ Humanities</td>
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<tr>
<td>☐ Natural Sciences</td>
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<tr>
<td>☐ Integrative Capstone</td>
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<table>
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<tr>
<th>15. Course Description</th>
<th>(suggested length 20 to 50 words)</th>
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<tr>
<td>Introduces technical skills needed by architectural technicians to work with architects. Includes office practices, staff relationships and architectural construction drawing production. Develops skills in architectural modeling, symbols, conventions, dimensioning systems, reference systems, code requirements, and research methods for detailing light commercial buildings.</td>
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<table>
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<tr>
<th>16a. Course Prerequisite(s) (list prefix and number or test code and score)</th>
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<tbody>
<tr>
<td>AET A102 and AET A181 with a minimum grade of C</td>
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<tr>
<th>16b. Co-requisite(s) (concurrent enrollment required)</th>
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| 17. ☒ Mark if course has fees |

| 18. ☐ Mark if course is a selected topic course |

<table>
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<th>19. Justification for Action</th>
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<tbody>
<tr>
<td>Updating terminology in course title and course description as per AET Advisory Committee. Update CCG and Catalog Copy.</td>
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<tr>
<td>J. Ellen McKay</td>
</tr>
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<th>Provost or Designee</th>
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<tr>
<td>Date</td>
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135
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
   A. College: Community and Technical College
   B. Course Prefix: AET
   C. Course Number: A121
   D. Number of Credits & Contact Hours: 3 (2+3)
   E. Course Title: Architectural Construction Drawings
   F. Grading Basis: A-F
   G. Implementation Date: Fall 2015
   H. Cross-listed N/A
   I. Stacked: N/A
   J. Course Description: Introduces technical skills needed by architectural technicians to work with architects. Includes office practices, staff relationships and architectural construction drawing production. Develops skills in architectural modeling, symbols, conventions, dimensioning systems, reference systems, sheet organization, code requirements, and research methods for detailing light commercial buildings.
   K. Course Attributes: N/A
   L. Course Prerequisites: AET A102 and AET A181 with a minimum grade of C
      Test Scores: N/A
      Course Co-requisite: N/A
      Registration Restriction: N/A
   M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: To introduce students to the professional practices of an architectural office including the elements of contract documentation.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Demonstrate an understanding of class lab and safety procedures</td>
<td>Class participation</td>
</tr>
<tr>
<td>2. Describe the role relationship between architectural technician and architect.</td>
<td>Written examination</td>
</tr>
<tr>
<td>3. Identify and explain the process of coordination that exists between the architect and other consultants.</td>
<td>Written examination</td>
</tr>
<tr>
<td>4. Demonstrate a working vocabulary of architectural terminology.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>5. Demonstrate a familiarity with building codes, association standards, drawing conventions, and manufacturing information effecting architectural design.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>6. Recognize and differentiate plans, elevations, sections, details, schedules, general architectural notes, acceptable industrial standards, symbols, architectural specifications and their format, and change orders in both construction drawings and specifications.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>7. Produce architectural floor plans, exterior elevations, building sections, wall sections, and architectural details using CADD and 3-D modeling techniques.</td>
<td>Written examination and CADD projects</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review
2.0 Architectural Design Team
   2.1 Role relationships
   2.2 Consultants
   2.3 Terminology
   2.4 Timesheets and cost accounting
3.0 Architectural Contract Documents
   3.1 Construction drawings
      3.1.1 Line types
      3.1.2 Lettering
      3.1.3 Symbols
      3.1.4 Reference systems
   3.2 Specifications

4.0 Floor Plans
   4.1 Methods of delineation
   4.2 Dimensioning
   4.3 Scale
   4.4 Schedule

5.0 Exterior Elevations
   5.1 Methods of delineation
   5.2 Dimensioning techniques
   5.3 Scale
   5.4 Doors and windows

6.0 Building Sections
   6.1 Methods of delineation
   6.2 Dimensioning techniques
   6.3 Scale

7.0 Wall Sections
   7.1 Methods of delineation
   7.2 Dimensioning techniques
   7.3 Scale

8.0 Details
   8.1 Methods of delineation
   8.2 Dimensioning techniques
   8.3 Scale

VI.  Suggested Texts


VII. Bibliography


*Denotes classic text.
<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<td>ACDT Division of Construction</td>
<td>AET</td>
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<table>
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<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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<td>A123</td>
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<td>3 cr.</td>
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6. Complete Course Title

**Codes and Standards**

Abbreviated Title for Transcript (30 character)

<table>
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<tr>
<th>7. Type of Course</th>
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<th>Add or</th>
<th>Change or</th>
<th>Delete</th>
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If a change, mark appropriate boxes:

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Automatic Restrictions
- Other CCG, Catalog Copy (please specify)

9. Repeat Status No

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10. Grading Basis

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<th>P/NP</th>
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11. Implementation Date

From: Fall/2015
To: /9999

12. Cross Listed with

<table>
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<th>Stacked with</th>
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Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
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<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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Initiator Name (typed): J. Ellen McKay

Initiator Signed Initials: _________

Date: __________

13b. Coordination Email

Date: 2/11/15

submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison

Date: 2/10/15

14. General Education Requirement

Mark appropriate box:

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)

Provides an introduction and overview of the fundamental provisions of the building codes used for plan review, life-safety evaluation of buildings, and community development.

16a. Course Prerequisite(s) (list prefix and number or test code and score)

N/A

16b. Co-requisite(s) (concurrent enrollment required)

N/A

16c. Automatic Restriction(s)

- College
- Major
- Class
- Level

16d. Registration Restriction(s) (non-codable)

N/A

17. Mark if course has fees

- ☒

18. Mark if course is a selected topic course

- ☐

19. Justification for Action

This course and CM A123 are being uncross listed to simplify course sections and coding. Update CCG and Catalog Copy.

Initiator (faculty only)

<table>
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<tr>
<td>J. Ellen McKay</td>
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Initiator Signed Initials: _________

Date: __________

Approved

Disapproved

Dean/Director of School/College

Date: __________

Approved

Disapproved

Undergraduate/Graduate Academic

Date: __________

Approved

Disapproved

Board Chair

Date: __________

Approved

Disapproved

Provost or Designee

Date: __________
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A123
D. Number of Credits & Contact Hours: 3 (3+0)
E. Course Title: Codes and Standards
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Provides an introduction and overview of the fundamental provisions of the building codes used for plan review, life-safety evaluation of buildings, and community development.
K. Course Attributes: N/A
L. Course Prerequisites: AET A101 and AET A102
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: N/A
M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. **Instructional Goals, Student Learning Outcomes and Assessment Measures.**

A. **Instructional Goal:** Introduce the students to the life-safety requirements of model building codes. An emphasis will be placed on realistic assignments that interpret existing construction drawings and completed projects.

B. **Student Learning Outcomes and Assessment Measures:**

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Differentiate between life-safety requirements and structural requirements in model building codes.</td>
<td>Written examination, written exercises,</td>
</tr>
<tr>
<td>2. Describe how model codes are adopted and locally amended.</td>
<td>Written examination</td>
</tr>
<tr>
<td>3. Identify the local authority having jurisdiction.</td>
<td>Written examination</td>
</tr>
<tr>
<td>4. Identify the principal occupancy classifications used by model building codes.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>5. Compare the occupancy classifications to familiar building codes.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>6. Differentiate between special and mixed sure building occupancy classifications.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>7. Differentiate between building structural systems and match those with types of construction as defined by standard building codes.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>8. Describe code restrictions on building size, height and location on property depending on occupancy classification and type of construction.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>9. Compute allowable area and allowable height of buildings dependent on occupancy classification and building type.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>10. Interpret construction drawings and compare the information they contain to model building code requirements.</td>
<td>Written examination, written exercises, and class discussion</td>
</tr>
<tr>
<td>11. Identify the path of egress and the primary code provisions that apply to the path such as doors, stairways, corridors, aisles, and horizontal exits.</td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>12. Compare fire resistive assemblies classifications to the building code provisions that govern each type of construction and building occupancy.</td>
<td>Written examination and written exercises</td>
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<tr>
<td>13.</td>
<td>Identify the ratings classifications used for interior finishes and define code provisions governing the use of rated finish materials in buildings.</td>
</tr>
<tr>
<td></td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>14.</td>
<td>Identify different types of fire detection and suppression systems for buildings and when required.</td>
</tr>
<tr>
<td></td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>15.</td>
<td>Develop a basic understanding of the requirements for handicap accessibility in buildings as required by the codes and the standards adopted by the codes.</td>
</tr>
<tr>
<td></td>
<td>Written examination and written exercises</td>
</tr>
<tr>
<td>16.</td>
<td>Outline the concepts of comprehensive community planning and zoning; i.e., Municipality of Anchorage, Title 21, “Land Use Planning.”</td>
</tr>
<tr>
<td></td>
<td>Written examination and written exercises</td>
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</table>

V. **Topical Course Outline**

1.0 Safety Procedures

1.1 University policies
1.2 Course and lab procedures
1.3 Emergency egress review

2.0 Overview of Model Building Codes

2.1 Uniform Building Code (International Building Code)
2.2 Uniform Mechanical Code
2.3 Uniform Plumbing Code
2.4 Council of American Building Officials (residential)
2.5 Southern Building Code Congress
2.6 Building Officials and Code Administrators International
2.7 National Fire Protection Association
2.8 Local zoning law, i.e., Municipality of Anchorage, Title 21
2.9 Local building safety law; i.e., Municipality of Anchorage, Title 23

3.0 Building Use/Occupancy Classification

3.1 Determining use of occupancy
3.2 Key elements and requirements of occupancies
  3.2.1 Assembly (A)
  3.2.2 Business (B)
  3.2.3 Educational (E)
  3.2.4 Factory or industrial (F)
  3.2.5 Hazardous (H)
  3.2.6 Institutional (I)
  3.2.7 Medical (M)
  3.2.8 Hotels, apartments, dwellings (R)
  3.2.9 Storage (S)
  3.2.10 Garages, sheds (U)
3.3 Special use and occupancy
3.4 Mixed occupancy
4.0 Requirements for Types of Construction
   4.1 Type I
   4.2 Type II
   4.3 Type III
   4.4 Type IV
   4.5 Type V

5.0 Building Size and Location
   5.1 Location on property
   5.2 Allowable floor area
   5.3 Allowable height

6.0 Means of Egress
   6.1 Path of egress
   6.2 Principles of exiting
   6.3 Occupant load
   6.4 Doors
   6.5 Stairways
   6.6 Corridors
   6.7 Horizontal exits
   6.8 Aisles
   6.9 Special requirements for A, E, H, and I occupancies

7.0 Fire Resistant Materials and Construction
   7.1 Fire resistive systems
   7.2 Protection of structure

8.0 Interior Finishes
   8.1 Classification of materials
   8.2 Use of finishes by occupancy classification

9.0 Automatic Fire Detection and Suppression Systems

10.0 Accessibility
11.0 Local Building Safety Law
12.0 Local Land Use Planning
   12.1 Municipality of Anchorage, Title 21
   12.2 Comprehensive Plan
   12.3 Zoning districts
   12.4 Supplementary district regulations
   12.5 Conditional use standards

VI. Suggested Texts

VII. Bibliography


*Denotes classic text.*
<table>
<thead>
<tr>
<th>Impacted Program or Course</th>
<th>Date of Notification</th>
<th>Chair/Coordinator Contacted</th>
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<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
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<td>Donald M. Ketner Jr.</td>
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<td>Donald M. Ketner Jr.</td>
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### Course Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course**

<table>
<thead>
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<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET</td>
<td>A131</td>
<td>N/A</td>
<td>3 cr.</td>
<td>(2+3)</td>
</tr>
</tbody>
</table>

### 6. Complete Course Title

**Structural Construction Drawings**

**Structural Const. Drawings**

Abbreviated Title for Transcript (30 character)

### 7. Type of Course

- [x] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

### 8. Type of Action:

- [ ] Add
- [ ] Change
- [ ] Delete

If a change, mark appropriate boxes:

- [x] Prefix
- [ ] Course Number
- [ ] Contact Hours
- [ ] Repeat Status
- [x] Title
- [ ] Grade Basis
- [ ] Registration Restrictions
- [ ] General Education Requirement
- [ ] Other CCG, Catalog Copy (please specify)

### 9. Repeat Status

- [ ] choose one
- # of Repeats
- Max Credits

### 10. Grading Basis

- [x] A-F
- [ ] P/NP
- [ ] NG

### 11. Implementation Date

- From: Fall/2015
- To: /9999

### 12. Cross Listed with

- [ ] Stacked with

Cross-Listed Coordination Signature

### 13a. Impacted Courses or Programs

List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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</thead>
<tbody>
<tr>
<td>1. AAS in AET</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): J. Ellen McKay

Initiator Signed Initials: _________

Date:________________

### 13b. Coordination Email

Date: 2/11/15

submitted to Faculty Listserv: (faculty.lists.uaa.alaska.edu)

### 13c. Coordination with Library Liaison

Date: 2/10/15

### 14. General Education Requirement

Mark appropriate box:

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

### 15. Course Description (suggested length 20 to 50 words)

Introduces technical skills needed by structural technicians to work with structural engineers. Includes office practices, staff relationships and structural drawing production. Develops skills in modeling, symbols, conventions, dimensioning systems, sheet organization, code analysis, and research methods for steel, masonry, wood, and reinforced concrete buildings.

### 16a. Course Prerequisite(s) (list prefix and number or test code and score)

AET A102 and AET A181

### 16b. Co-requisite(s) (concurrent enrollment required)

NONE

### 16c. Automatic Restriction(s)

- [x] College
- [ ] Major
- [ ] Class
- [ ] Level

### 16d. Registration Restriction(s) (non-codable)

NONE

### 17. Mark if course has fees

- [ ]

### 18. Mark if course is a selected topic course

- [ ]

### 19. Justification for Action

Updating terminology in course title and course description as per AET Advisory Committee. Update CCG and Catalog Copy.

Initiator (faculty only)

J. Ellen McKay

Initiator (TYPE NAME)

Approved

Disapproved

Dean/Director of School/College

Date

Approved

Disapproved

Department Chair

Date

Approved

Disapproved

Undergraduate/Graduate Academic

Date

Approved

Disapproved

Board Chair

Date

Approved

Disapproved

Provost or Designee

Date

147
I. **Date of Initiation:** Fall 2014

II. **Curriculum Action Request**
   A. **College:** Community and Technical College
   B. **Course Prefix:** AET
   C. **Course Number:** A131
   D. **Number of Credits & Contact Hours:** 3 (2+3)
   E. **Course Title:** Structural Construction Drawings
   F. **Grading Basis:** A-F
   G. **Implementation Date:** Fall 2015
   H. **Cross-listed:** N/A
   I. **Stacked:** N/A
   J. **Course Description:** Introduces technical skills needed by structural technicians to work with structural engineers. Includes office practices, staff relationships and structural drawing production. Develops skills in modeling, symbols, conventions, dimensioning systems, sheet organization, code analysis, and research methods for steel, masonry, wood, and reinforced concrete buildings.
   K. **Course Attributes:** N/A
   L. **Course Prerequisites:** AET A102 and AET A181 with a minimum grade of C
   M. **Registration Restriction:** N/A
   N. **Course Fees:** Yes

III. **Course Level Justification.** This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: To introduce students to the professional practices of a structural engineering office in the creation of contract documents for steel structural systems, masonry structural systems, wood structural systems, and reinforced concrete systems.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Describe the role relationships among structural technician, structural engineer, and other consultants.</td>
<td>Written examination</td>
</tr>
<tr>
<td>2. Define the use of time sheets, budgets, and cost accounting procedures.</td>
<td>Written examination</td>
</tr>
<tr>
<td>3. Demonstrate a working vocabulary of structural engineering terminology.</td>
<td>Written examination and CADD (computer-aided design and drafting) projects</td>
</tr>
<tr>
<td>4. Demonstrate a familiarity with building codes, association standards, drawing conventions, and manufacturing information effecting structural design.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>5. Recognize and differentiate the use, preparation, and production of structural construction drawings including plans, sections, elevations, details, schedules, and general notes in acceptable industrial standards, using symbols and drawing conventions as they apply to concrete, masonry, steel, and wood structural systems using CADD and 3-D modeling techniques.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>6. Construct and correlate structural engineering specifications based on their format and acceptable industrial standards.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>7. Explain the involvement of the technician in relation to changes in both construction drawings and specifications</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>8. Explain elementary structural statics principles, including loads, forces, and the properties of areas.</td>
<td>Written examination and CADD projects</td>
</tr>
</tbody>
</table>
V. **Topical Course Outline**

1.0 Safety Procedures
   - 1.1 University policies
   - 1.2 Course and lab procedures
   - 1.3 Emergency egress review

2.0 Structural Design Team
   - 2.1 Role relationships
   - 2.2 Consultants
   - 2.3 Terminology
   - 2.4 Timesheets and cost accounting

3.0 Structural Contract Documents
   - 3.1 Design/engineering drawings
   - 3.2 Shop drawings
   - 3.3 Specifications

4.0 Structural Statics
   - 4.1 Types of loads
   - 4.2 Forces
   - 4.3 Properties of areas

5.0 Steel Structural Members
   - 5.1 Shapes
   - 5.2 Composites
   - 5.3 Sizes and uses
   - 5.4 Connection methods
     - 5.4.1 Bolt sizing (AISC)
     - 5.4.2 Angle sizing (AISC)
     - 5.4.3 Welding

6.0 Masonry Construction
   - 6.1 Types of masonry
   - 6.2 Grout
   - 6.3 Mortar
   - 6.3 Steel reinforcement

7.0 Wood Construction
   - 7.1 Dimensional lumber
   - 7.2 Timber
   - 7.3 Glue laminated structural units
   - 7.4 Wood joists
   - 7.5 Connection methods

8.0 Reinforced Concrete Construction
   - 8.1 Types and uses
   - 8.2 Admixtures
   - 8.3 Concrete formwork
   - 8.4 Columns
   - 8.5 Beams
   - 8.6 Steel reinforcement
   - 8.7 Concrete placing drawings
   - 8.8 Cast-in-place
   - 8.9 Pre-cast
8.9.1 Pre-stressed
8.9.2 Post-tensioned

VI. Suggested Texts


VII. Bibliography


*Denotes classic text.
### Course Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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<tr>
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<th>6. Complete Course Title</th>
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<td>Mechanical and Electrical Technology</td>
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<td>Mechanical &amp; Electrical Tech.</td>
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<th>7. Type of Course</th>
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<tr>
<td>☑ Academic</td>
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<tr>
<td>☐ Preparatory/Development</td>
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<td>☐ Non-credit</td>
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<tr>
<td>☐ CEU</td>
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<td>☐ Professional Development</td>
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<tr>
<td>☐ Change</td>
</tr>
<tr>
<td>☐ Delete</td>
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If a change, mark appropriate boxes:

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Automatic Restrictions
- Other CCG, Catalog Copy (please specify)

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<tbody>
<tr>
<td>☑ A-F</td>
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<table>
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<tr>
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<tr>
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<td>Cross-Listed Coordination Signature</td>
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</table>

#### 13a. Impacted Courses or Programs: List any programs or college requirements that require this course. Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

- [Impacted Program/Course](#)
- [Date of Coordination](#)
- [Chair/Coordinator Contacted](#)

Initiator Name (typed): J. Ellen McKay  
Initiator Signed Initials: _________  
Date: __________

13b. Coordination Email  
submitted to Faculty Listserv: [ uaafaculty@lists.uaa.alaska.edu](mailto:uaafaculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison  
Date: 2/10/15

14. General Education Requirement  
Mark appropriate box:

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)

Introduces the basic mechanical and electrical systems required in all buildings for the safety, health, comfort, and convenience of the occupants. Emphasizes design criteria, code requirements, interpretation of construction drawings and building energy usage.

<table>
<thead>
<tr>
<th>16a. Course Prerequisite(s) (list prefix and number or test code and score)</th>
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<tbody>
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<td>☑ College</td>
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<td>☑ Major</td>
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<tr>
<td>☑ Class</td>
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<td>☑ Level</td>
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<th>17. ☑ Mark if course has fees</th>
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| 18. ☑ Mark if course is a selected topic course |

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
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</table>

This course and CM A142 are being uncross listed to simplify course sections and coding. Update CCG and Catalog Copy.

### Initiator (faculty only)

<table>
<thead>
<tr>
<th>J. Ellen McKay</th>
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Initiator (TYPE NAME)

<table>
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<th>Disapproved</th>
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<tr>
<td>Dean/Director of School/College</td>
<td>Date</td>
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<td>Undergraduate/Graduate Academic Board Chair</td>
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<tr>
<td>Provost or Designee</td>
<td>Date</td>
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152
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A142
D. Number of Credits & Contact Hours: 4 (3+2)
E. Course Title: Mechanical and Electrical Technology
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Introduces basic mechanical and electrical systems required in all buildings for the safety, health, comfort, and convenience of the occupants. Emphasizes design criteria, code requirements, interpretation of construction drawings and building energy usage.
K. Course Attributes: N/A
L. Course Prerequisites: MATH A105 with a minimum grade of C or concurrent enrollment
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: Proof of eligibility for placement into ENGL A111. Appropriate SAT, ACT, or UAA approved Math Placement Test scores may be used in lieu of MATH A105.

M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: Introduce basic knowledge of building mechanical and electrical systems to entry-level technicians and construction managers.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Identify potable water systems, the regulatory codes for water system design and installation and calculate piping size based on demand.</td>
<td>Written examination and graded project</td>
</tr>
<tr>
<td>2. Identify elements of drainage piping systems for buildings, the regulatory codes for drainage system design and installation, the purpose of system venting, and the installation methods and materials for drain, waste and vent systems for buildings.</td>
<td>Written examination and graded project</td>
</tr>
<tr>
<td>3. Summarize the effects of heat transfer, temperature and humidity, building solar design/orientation, and fresh air ventilation on human comfort and energy usage.</td>
<td>Written examination and graded project</td>
</tr>
<tr>
<td>4. Describe the effects that climate and building construction systems have on the building’s heat loss/gain and energy usage.</td>
<td>Written examination and graded project</td>
</tr>
<tr>
<td>5. Identify the equipment and components of HVAC systems.</td>
<td>Written examination and graded drawing interpretation</td>
</tr>
<tr>
<td>6. Describe the methods of electrical power generation and distribution grids.</td>
<td>Written examination and written exercise</td>
</tr>
<tr>
<td>7. Describe the properties of conductors and insulators.</td>
<td>Written examination</td>
</tr>
<tr>
<td>8. Describe the different types of electrical services and the electrical equipment used for power distribution in buildings.</td>
<td>Written examination and graded project</td>
</tr>
<tr>
<td>9. Examine branch circuitry for residential and commercial buildings, identify the materials and methods used, estimate branch circuit loads for lighting, appliances, and motors, and compute conductor and conduit sizes.</td>
<td>Written examination and graded project</td>
</tr>
<tr>
<td>10. Identify the requirements for low-voltage power systems such as building controls, communication, fire alarm, and TV.</td>
<td>Written examination</td>
</tr>
<tr>
<td>11. Define various types of interior lighting, lighting levels, energy use by lighting type and calculate the lumens required using software of the zonal cavity method.</td>
<td>Written examination and graded project</td>
</tr>
</tbody>
</table>
V. **Topical Course Outline**

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Water Supply and Design
   2.1 Water source and distribution
   2.2 Water systems
   2.3 Water demand
   2.4 Plumbing codes
   2.5 Pipe materials, fittings, valves
   2.6 Upfeed/downfeed systems
   2.7 Design calculations

3.0 Plumbing Drain, Waste, and Vent Systems
   3.1 Drainage and venting principles
   3.2 Water supply systems
   3.3 Terminology
   3.4 Piping materials and fittings
   3.5 Plumbing fixtures
   3.6 Drainage design

4.0 Basic Thermal Process and Human Comfort
   4.1 Heat transfer
   4.2 Temperature and humidity
   4.3 Ventilation
   4.4 Solar orientation and design

5.0 Building Heat Loss
   5.1 Calculation factors
   5.2 "R" and "U" values
   5.3 Infiltration losses
   5.4 Heating degree days
   5.5 Energy use and fuel costs

6.0 Heating, Ventilating, and Air Conditioning
   6.1 Hot water heating
   6.2 Heat plants and chillers
   6.3 Forced air systems
   6.4 Ducts, duct fittings, duct design
   6.5 Supply/return locations
   6.6 Interpret HVAC drawings

7.0 Fundamentals of Electricity
   7.1 AC/DC generation and circuits
   7.2 Ohm’s Law
   7.3 Watt’s Law
   7.4 Conductors and insulators
   7.5 Transformers
   7.6 Electrical distribution grids

8.0 Building Electrical Systems
   8.1 Overhead and lateral services
   8.2 Meters
8.3 Building disconnect switches
8.4 Panels
8.5 Main distribution panels
8.6 Branch panels
8.7 Interpret electrical drawings

9.0 Branch Circuits
  9.1 Circuit breakers
  9.2 Conductors
  9.3 Devices
  9.4 Loading

10.0 Lighting
  10.1 Lighting levels and lighting efficiency
  10.2 Light fixture types
  10.3 Switching
  10.4 Interpret lighting drawings

VI. Suggested Texts


VII. Bibliography


International Association of Plumbing and Mechanical Officials. (latest). Uniform mechanical code. Walnut Creek, CA: Author.

International Association of Plumbing and Mechanical Officials. (latest). Uniform plumbing code. Walnut Creek, CA: Author.


*Denotes classic text.
<table>
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<tr>
<th>Impacted Program or Course</th>
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<th>Chair/Coordinator Contacted</th>
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</thead>
<tbody>
<tr>
<td>AAS/AET</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
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<td>AAS/CM</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>BS/CM</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Mechanical and Electrical Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
</tbody>
</table>
## Course Action Request

### University of Alaska Anchorage

**Proposal to Initiate, Add, Change, or Delete a Course**

---

### 1a. School or College

**CT CTC**

### 1b. Division

**ACDT Division of Construction Design Technology**

### 1c. Department

**AET**

---

### 2. Course Prefix

**AET**

### 3. Course Number

**A143**

---

### 4. Previous Course Prefix & Number

**N/A**

---

### 5a. Credits/CEUs

**3 cr.**

---

### 5b. Contact Hours

**(Lecture + Lab)**

**(2+3)**

---

### 6. Complete Course Title

**Mechanical & Electrical Construction Drawings**

**Mech. & Elec. Const. Drawings**

---

### 7. Type of Course

- [x] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

---

### 8. Type of Action:

- [ ] Add
- [x] Change
- [ ] Delete

---

### 9. Repeat Status

- Choose one
- **# of Repeats**
- **Max Credits**

---

### 10. Grading Basis

- [x] A-F
- [ ] P/NP
- [ ] NG

---

### 11. Implementation Date

**From:** Fall/2015  
**To:** /9999

---

### 12. Cross Listed with

- [ ] Stacked with

---

### 13a. Impacted Courses or Programs

List any programs or college requirements that require this course.

---

### 13b. Coordination Email

Date: 2/11/15  
submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu)

---

### 13c. Coordination with Library Liaison

Date: 2/10/15

---

### 14. General Education Requirement

- [ ] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [ ] Humanities
- [ ] Fine Arts
- [ ] Social Sciences
- [ ] Natural Sciences
- [ ] Integrative Capstone

---

### 15. Course Description

(suggested length 20 to 50 words)

Introduces technical analysis, theory, code requirements, modeling techniques, and construction drawing methodology to produce construction drawings for mechanical and electrical building systems. Includes drawing conventions, symbols, terminology and research methods for residential and commercial building mechanical and electrical systems and equipment.

---

### 16a. Course Prerequisite(s)

(Enter prefix and number or test code and score)

**AET A102 and AET A181**

---

### 16b. Co-requisite(s)

(concurrent enrollment required)

**NONE**

---

### 16c. Automatic Restriction(s)

- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

---

### 16d. Registration Restriction(s)

(non-codable)

**NONE**

---

### 17. Mark if course has fees

- [x] Yes

---

### 18. Mark if course is a selected topic course

- [ ] Yes

---

### 19. Justification for Action

- Updating terminology in course title and course description as per AET Advisory Committee and updating bibliography. Update Catalog Copy.

---

### Initiator Name (typed)

**J. Ellen McKay**

Initiator Signed Initials: _________

Date: _________

---

### Initiator (faculty only)

**J. Ellen McKay**

Initiator (TYPE NAME)

---

### Approved

- [ ] Dean/Director of School/College

Date: _________

---

### Disapproved

- [ ] Undergraduate/Graduate Academic

Date: _________

---

### Approved

- [ ] Board Chair

Date: _________

---

### Disapproved

- [ ] Provost or Designee

Date: _________
University of Alaska Anchorage
Community and Technical College
Course Content Guide

I. Date of Initiation: Fall 2014

II. Curriculum Action Request
   A. College: Community and Technical College
   B. Course Prefix: AET
   C. Course Number: A143
   D. Number of Credits & Contact Hours: 4 (2+4)
   E. Course Title: Mechanical & Electrical Construction Drawings
   F. Grading Basis: A-F
   G. Implementation Date: Fall 2015
   H. Cross-listed: N/A
   I. Stacked: N/A
   J. Course Description: Introduces technical analysis, theory, code requirements, modeling techniques, and construction drawing methodology to produce construction drawings for mechanical and electrical building systems. Includes drawing conventions, symbols, terminology and research methods for residential and commercial building mechanical and electrical systems and equipment.
   K. Course Attributes: N/A
   L. Course Prerequisites: AET A102 and AET A181
      Test Scores: N/A
      Course Co-requisite: N/A
      Registration Restriction: N/A
   M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: Introduce students to the basic concepts, drawing presentation techniques, and construction drawing standards for mechanical and electrical systems in buildings using modeling software.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Produce project site drawings to layout and draw building utility services, site utilities, and site improvements related to the mechanical and electrical systems.</td>
<td>Written examination</td>
</tr>
<tr>
<td>2. Identify and draw the elements of a typical plumbing system including the piping and fixtures.</td>
<td>Written examination and CADD (computer-aided design and drafting) projects</td>
</tr>
<tr>
<td>3. Differentiate between the drawing line types used for domestic water, drain, waste, and vent systems.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>4. Identify areas within a building where plumbing system components may be placed or routed.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>5. Produce electrical power system drawings for buildings, including electrical power plans, panel riser diagrams, circuit breaker panel schedules, and electrical equipment schedules.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>6. Produce HVAC drawings including ductwork plans, mechanical/utility room plans, and details and elevations of heating and ventilation specialties.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>7. Identify locations within the building where HVAC components may be placed or routed and how HVAC components must be coordinated with other building systems.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>8. Produce lighting plans that show the location and types of light fixtures and light switches for typical projects.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>9. Draw a light fixture schedule and total light fixture circuit loads.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>10. Produce drawings and drawing schedules that convey the engineer’s design for sound, signal, and communications drawings for typical building projects.</td>
<td>Written examination and CADD projects</td>
</tr>
</tbody>
</table>
V. **Topical Course Outline**

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Site Mechanical and Electrical Drawings
   2.1 Storm sewerage
   2.2 Sanitary sewerage
   2.3 Water distribution
   2.4 Fuel distribution systems
   2.5 Septic systems
   2.6 Electric service
   2.7 Site electrical
   2.8 Outdoor area lighting
   2.9 Communication systems
   2.10 Irrigation systems

3.0 Plumbing Drawings
   3.1 Domestic water supply
   3.2 Drain, waste, and vent
   3.3 Pipe riser isometric diagrams
   3.4 Piping and fitting symbols
   3.5 Plumbing fixture symbols
   3.6 Plumbing fixture schedules
   3.7 Roof drainage systems

4.0 Electrical Drawings
   4.1 Power distribution
   4.2 Branch circuitry
   4.3 Power riser diagrams
   4.4 Electrical symbols
   4.5 Electrical equipment schedules
   4.6 Panelboard diagrams

5.0 Heating, Ventilating, and Air Conditioning
   5.1 Water heating drawings
   5.2 Heating/cooling plant equipment drawings
   5.3 Duct system drawings
   5.4 Supply/return grille locations
   5.5 Elevations and details of HVAC specialties

6.0 Lighting Drawings
   6.1 Fixture schedules
   6.2 Lighting plans
   6.3 Lighting symbols
   6.4 Switch locations

7.0 Sound, Signal, and Communication Drawings
   7.1 Building controls
   7.2 Clock and intercom systems
   7.3 Fire and hazard detection systems
   7.4 TV and sound systems
7.5 Telephone systems
7.6 Computer network systems

VI. Suggested Texts


VII. Bibliography


*Denotes classic text.
# Course Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET</td>
<td>A181</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>(2+4)</td>
</tr>
</tbody>
</table>

6. **Complete Course Title**

Intermediate CADD for Building Construction

**Abbreviated Title for Transcript (30 characters)**

7. **Type of Course**

- [X] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

8. **Type of Action:**

- [ ] Add
- [X] Change
- [ ] Delete

If a change, mark appropriate boxes:

- [ ] Prefix
- [ ] Credits
- [ ] Title
- [ ] Grading Basis
- [X] Course Description
- [ ] Test Score Prerequisites
- [ ] Automatic Restrictions
- [X] Other CCG, Catalog Copy (please specify)

9. **Repeat Status No**

- [ ] # of Repeats
- [ ] Max Credits

10. **Grading Basis**

- [X] A-F
- [ ] P/NP
- [ ] NG

11. **Implementation Date**

- [ ] semester/year

12. **Cross Listed with**

- [ ] Stacked with

13a. **Impacted Courses or Programs:** List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
</table>

13b. **Coordination Email**

- [ ] See attached spreadsheet.
- [ ] submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu)

13c. **Coordination with Library Liaison**

- [ ] Date: 2/12/15

14. **General Education Requirement**

- [ ] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [ ] Humanities
- [ ] Social Sciences
- [ ] Natural Sciences
- [ ] Integrative Capstone

15. **Course Description** *(suggested length 20 to 50 words)*

Develops intermediate level CADD (computer-aided design and drafting) skills for architectural, civil, structural, mechanical and electrical construction drawings used in building construction. Includes 3-D modeling.

16a. **Course Prerequisite(s) (list prefix and number or test code and score)**

- [ ] AET A101

16b. **Co-requisite(s) (concurrent enrollment required)**

- [ ] NONE

16c. **Automatic Restriction(s)**

- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

17. **Mark if course has fees**

- [X] Mark if course is a selected topic course

18. **Mark if course is a selected topic course**

19. **Justification for Action**

CM A101 was previously listed as a prerequisite. CM A101 is being deleted. Update course description, CCG and Catalog Copy.

<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Dean/Director of School/College</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Ellen McKay</td>
<td></td>
<td></td>
<td></td>
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Initiator (TYPE NAME)

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<table>
<thead>
<tr>
<th>Department Chair</th>
<th>Date</th>
<th>Undergraduate/Graduate Academic</th>
<th>Date</th>
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<table>
<thead>
<tr>
<th>College/School Curriculum Committee Chair</th>
<th>Date</th>
<th>Provost Or Designee</th>
<th>Date</th>
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I. Date of Initiation: Fall 2014

II. Curriculum Action Request
   A. College: Community and Technical College
   B. Course Prefix: AET
   C. Course Number: A181
   D. Number of Credits & Contact Hours: 4 (2+4)
   E. Course Title: Intermediate CADD for Building Construction
   F. Grading Basis: A-F
   G. Implementation Date: Fall 2015
   H. Cross-listed: N/A
   I. Stacked: N/A
   J. Course Description: Develops intermediate level CADD (computer-aided
design and drafting) skills for architectural, civil, structural, mechanical and electrical
construction drawings used in building construction. Includes 3-D modeling.
   K. Course Attributes: N/A
   L. Course Prerequisites: AET A101 with a minimum grade of C
      Test Scores: N/A
      Course Co-requisite: N/A
      Registration Restriction: N/A
   M. Course Fees: Yes

III. Course Level Justification. This course introduces a field of knowledge and develops basic skills.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: To further the student’s knowledge of CADD and to introduce 3-D modeling concepts.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
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</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Select drawing sheet sizes and compute the drawing area and title block areas.</td>
<td>Written examination</td>
</tr>
<tr>
<td>2. Describe the use of the sheet production data area.</td>
<td>Written examination</td>
</tr>
<tr>
<td>3. Describe the drawing coordinate system according to the Uniform Drawing System.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>4. Describe drawing schedule content and produce drawing schedules.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>5. Describe the purpose of the information found on cover sheets.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>6. Differentiate among the types and know the placement of notations used on construction drawings.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>7. Illustrate the basics of 3-D modeling.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>8. Demonstrate the basics of 3-D modeling concepts in the preparation of construction drawings.</td>
<td>Written examination and CADD projects</td>
</tr>
<tr>
<td>9. Produce 3-D models of building construction projects.</td>
<td>CADD projects</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Drawing Sheet Organization
   2.1 Drawing areas and title blocks
   2.2 Production data areas
   2.3 Drawing coordinate system
   2.4 Cover sheets

3.0 Schedules
   3.1 Schedule formats
   3.2 Headings
   3.3 Content

4.0 Notations
   4.1 Purpose
   4.2 Types
4.2.1 General notes
4.2.2 General discipline notes
4.2.3 General sheet notes
4.2.4 Reference keynotes
4.2.5 Sheet keynotes

4.3 Note hierarchy
4.3 Scale
4.4 Schedule

5.0 Third Dimension
  5.1 Basic 3-D model
  5.2 Views
  5.3 Orbit
  5.4 Lines in 3-D space
  5.5 User coordinate system

6.0 3-D Modeling
  6.1 Primatives
  6.2 Solids
  6.3 Extrusions
  6.4 Lofting
  6.5 Surfaces

7.0 Solid Editing
  7.1 Boolean operations
  7.2 3-D move
  7.3 3-D rotate
  7.4 3-D scale

8.0 Building Information Modeling
  8.1 Grids and levels
  8.2 Model elements
  8.3 Families
  8.4 Sheets
  8.4 Views

VI. Suggested Texts

VII. Bibliography


*Denotes classic text.*
<table>
<thead>
<tr>
<th><strong>Course Being Changed:</strong></th>
<th>AET A181</th>
<th><strong>Impacted Program or Course</strong></th>
<th><strong>Date of Notification</strong></th>
<th><strong>Chair/Coordinator Contacted</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS/AET</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate Certificate, Civil Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate Certificate, Mechanical and Electrical Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
<td></td>
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</tr>
<tr>
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<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
<td></td>
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</tr>
<tr>
<td>AET A111</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
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<td></td>
</tr>
<tr>
<td>AET A121</td>
<td>2/9/15</td>
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<tr>
<td>AET A131</td>
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<td>Donald M. Ketner Jr.</td>
<td></td>
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<tr>
<td>AET A143</td>
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<td></td>
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</tr>
<tr>
<td>AET A286</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1a. School or College
CT CTC

1b. Division
AAPT Division of Applied Technology

1c. Department
AET

2. Course Prefix
AET

3. Course Number
A213

4. Previous Course Prefix & Number
N/A

5a. Credits/CEUs
4 cr.

5b. Contact Hours
(Lecture + Lab)
(2+4)

6. Complete Course Title
Civil Technology

7. Type of Course
☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action:
☐ Add ☐ Change ☞ Delete

If a change, mark appropriate boxes:

 New Prefix ☐ New Course Number ☐ New Contact Hours
 New Title ☐ New Repeat Status ☐ New Cross-Listed/Stacked
 New Course Description ☒ New Course Prerequisites ☐ New Co-requisites
 New Automatic Restrictions ☒ New Registration Restrictions ☐ New General Education Requirement
 New Other CCG, Catalog Copy (please specify)

9. Repeat Status No
# of Repeats
Max Credits

10. Grading Basis
☒ A-F ☐ P/NP ☒ NG

11. Implementation Date
From: Fall/2015 To: /9999

12. ☐ Cross Listed with
☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): J. Ellen McKay Initiator Signed Initials: __________ Date: __________

13b. Coordination Email Date: 2/11/15 submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 2/10/15

14. General Education Requirement

Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)

Outlines elements of civil design, including soils and soil mechanics, foundations, roads, and utilities using local, state and federal regulations. Introduces elements of construction surveying.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
AET A111 and MATH A105 with a minimum grade of C

16b. Co-requisite(s) (concurrent enrollment required)
NONE

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) (non-codable)
NONE

☐ Mark if course has fees

17. ☒ Mark if course is a selected topic course

18. ☐ Mark if course is a selected topic course

19. Justification for Action

Add AET A111 as a prerequisite to increase student success in the course. Update CCG and Catalog Copy.

Initiator (faculty only): J. Ellen McKay
Initiator (TYPE NAME)

Approved ☐ Disapproved ☐

Dean/Director of School/College Date

Approved ☐ Disapproved ☐

Undergraduate/Graduate Academic Board Chair Date

Approved ☐ Disapproved ☐

Provost or Designee Date
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A213
D. Number of Credits & Contact Hours: 4 (2+4)
E. Course Title: Civil Technology
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Outlines elements of civil design, including soils and soil mechanics, foundations, roads, and utilities using local, state, and federal regulations. Introduces elements of construction surveying.
K. Course Attributes: N/A
L. Course Prerequisites: AET A111 and MATH A105 with a minimum grade of C
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: N/A
M. Course Fees: Yes

III. Course Level Justification. This course builds upon a foundation of knowledge established in AET A101, AET A102, and AET A111.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

A. Instructional Goal: Present elements of civil design, including soils and soil mechanics, foundations, roads, utilities and construction surveying.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Relate the various codes and specifications to the design of specific civil projects, including subdivision design, road design and the design of utilities.</td>
<td>Written examination and class project</td>
</tr>
<tr>
<td>2. Describe the importance of soils testing in the civil design process.</td>
<td>Written examination and project</td>
</tr>
<tr>
<td>3. Define the properties and characteristics of soil types and how they relate to the construction process.</td>
<td>Written examination and project</td>
</tr>
<tr>
<td>4. Describe how various street design code provisions apply to the actual design of streets and roads.</td>
<td>Written examination and project</td>
</tr>
<tr>
<td>5. Utilize existing plan and profile construction drawings.</td>
<td>Written examination and project</td>
</tr>
<tr>
<td>6. Apply the various utility design code provisions to the design of utilities.</td>
<td>Written examination and project</td>
</tr>
<tr>
<td>7. Solve earthwork problems related to the design of construction projects.</td>
<td>Written examination and project</td>
</tr>
<tr>
<td>8. Solve construction surveying problems related to the design of construction projects.</td>
<td>Written examination and project</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Codes and Specifications
   2.1 Local codes
   2.2 Design criteria
   2.3 Standard specifications
   2.4 State and federal regulations

3.0 Soils
   3.1 Sampling
   3.2 Testing
   3.3 Properties and characteristics
3.4 Compaction
3.5 Stabilization

4.0 Foundations
   4.1 Shallow foundations
   4.2 Pile foundations
   4.3 Caissons

5.0 Road Design
   5.1 Horizontal curves
   5.2 Vertical curves
   5.3 Cul-de-sacs

6.0 Utility Design
   6.1 Electric, telephone, cable
   6.2 Water
   6.3 Sewer
   6.4 Gas

7.0 Earthwork
   7.1 Grading
   7.2 Cut & fill
   7.3 Quantities

8.0 Construction Surveying
   8.1 Building location and stakeout
   8.2 Dimension control
   8.3 Road layout
   8.4 Utility layout

VI. Suggested Texts


VII. Bibliography


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<tr>
<th>Impacted Program or Course</th>
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<td>AAS/AET</td>
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<td>Donald M. Ketner Jr.</td>
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Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

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</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>AET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET</td>
<td>A231</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 cr.</td>
<td>(2+4)</td>
</tr>
</tbody>
</table>

6. Complete Course Title
Structural Technology

Abbreviated Title for Transcript (30 character)

7. Type of Course
☐ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action:
☐ Add ☐ Change ☐ Delete

If a change, mark appropriate boxes:

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Automatic Restrictions
- Other CCG, Catalog Copy (please specify)

9. Repeat Status No
# of Repeats N/A Max Credits N/A

10. Grading Basis
☐ A-F ☐ P/NP ☐ NG

11. Implementation Date
semester/year From: Fall/2015 To: 9/999

12. Cross Listed with
☐ Stacked with

Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed):
J. Ellen McKay
Initiator Signed Initials: _________ Date: __________________

13b. Coordination Email
Date: 2/11/15 submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
Date: 2/10/15

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Examines structural theory and the physical principles that underlie structural behavior. Includes the use of materials in a manner to maintain structural stability against such natural forces as gravity, wind, snow, and earthquakes. Covers connection details and code requirements for wood, steel, and reinforced concrete.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
AET A101, AET A102, and MATH 105 with a minimum grade of C.

16b. Co-requisite(s) (concurrent enrollment required)
N/A

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) (non-codable)
N/A

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
This course and CM A231 are being uncross-listed to simplify course sections and coding. Update CCG and Catalog Copy.

Initiator (faculty only)
J. Ellen McKay
Initiator (TYPE NAME)

Approved
Disapproved
Dean/Director of School/College
Date

Approved
Disapproved
Undergraduate/Graduate Academic Board Chair
Date

Approved
Disapproved
Provost or Designee
Date

Initiator (faculty only)

Approved
Disapproved
Department Chair
Date

Approved
Disapproved
College/School Curriculum Committee Chair
Date

Date
I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: AET
C. Course Number: A231
D. Number of Credits & Contact Hours: 4 (2+4)
E. Course Title: Structural Technology
F. Grading Basis: A-F
G. Implementation Date: Fall 2015
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Examines structural theory and the physical principles that underlie structural behavior. Includes the use of materials in a manner to maintain structural stability against such natural forces as gravity, wind, snow, and earthquakes. Covers connection details and code requirements for wood, steel, and reinforced concrete.
K. Course Attributes: N/A
L. Course Prerequisites: AET A101, AET A102, and MATH A105 with a minimum grade of C
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: N/A
M. Course Fees: Yes

III. Course Level Justification. This course builds upon a foundation of knowledge established in AET A101 and AET A102. Connects completed course work or industry experience with advanced skill development.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.
A. Instructional Goal: Present elements of structural design, including structural theory, material behavior, detailing, and codes.

B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Learning Outcomes:</th>
<th>Assessment Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completion of this course, the student will be able to:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>1. Illustrate the nature of forces on a structural framework.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>2. Apply the fundamentals of statics to solve simple problems of structural design.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>3. Calculate bending, shear, and deflection for various beam types.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>4. Identify the properties of columns.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>5. Describe how wood beams and columns are designed for given loading situations.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>6. Describe how steel beams and columns are designed for given loading situations.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>7. Describe how reinforced concrete beams and columns are designed for given loading situations.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>8. Classify the various types of walls.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>9. Describe the advantages and disadvantages of each wall type.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>10. Identify the design issues involved with each wall type.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>11. Relate the forces placed on connections to the design of fastening systems for wood-to-wood connections, wood-to-steel connections and steel-to-steel connections.</td>
<td>Written examination and Solutions Manual</td>
</tr>
<tr>
<td>12. Explain the role of soils and concrete reinforcement in the design of foundations.</td>
<td>Written examination and Solutions Manual</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Statics
   2.1 Nature of forces
   2.2 Moment
   2.3 Equilibrium
   2.4 Free body diagrams
2.5 Properties of areas
2.6 Stress and strain

3.0 Beams and Columns
  3.1 Types of beams
  3.2 Loads
  3.3 Shear and moment
  3.4 Beam stress
  3.5 Columns

4.0 Wood Construction
  4.1 Load and resistance factor design for wood
  4.2 Lumber and timber sizes
  4.3 Design of wood beams
  4.4 Glue laminated beams
  4.5 Wood columns

5.0 Steel Construction
  5.1 Properties of steel
  5.2 Load and resistance factor design for steel
  5.3 Steel beam design for flexure
  5.4 Lateral support
  5.5 Shear
  5.6 Deflection
  5.7 Composite design
  5.8 Steel columns

6.0 Reinforced Concrete Construction
  6.1 Properties of concrete
  6.2 Reinforced concrete theory
  6.3 Load and resistance factor design for reinforced concrete
  6.4 Design of concrete beams
  6.5 Continuity of reinforced concrete
  6.6 Pre-stressed concrete
  6.7 Reinforced concrete columns

7.0 Walls
  7.1 Stud walls
  7.2 Masonry walls
  7.3 Reinforced concrete walls
  7.4 Tilt-up walls
  7.5 Retaining walls

8.0 Connections
  8.1 Wood-to-wood connections
  8.2 Wood to steel connections
  8.3 Steel-to-steel connections
VI. Suggested Texts


VII. Bibliography


*Denotes classic text.
<table>
<thead>
<tr>
<th>Impacted Program or Course</th>
<th>Date of Notification</th>
<th>Chair/Coordinator Contacted (not listerve)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS/AET</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>AAS/CM</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>BS/CM</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>Undergraduate Certificate, Structural Technology</td>
<td>2/9/15</td>
<td>Donald M. Ketner Jr.</td>
</tr>
</tbody>
</table>
Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College
CT CTC

1b. Division
ACDT Division of Construction

1c. Department
AET

2. Course Prefix
AET

3. Course Number
A282

4. Previous Course Prefix & Number
N/A

5a. Credits/CEUs
4 cr.

5b. Contact Hours
(2+4)

6. Complete Course Title
Advanced CADD Techniques

7. Type of Course
☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action: ☐ Add or ☐ Change or ☒ Delete

If a change, mark appropriate boxes:
☒ Prefix ☐ Course Number ☒ Repeat Status 
☒ Credits ☒ Contact Hours ☒ Cross-Listed/Stacked
☒ Title ☐ Repeat Status ☒ Co-requisites 
☒ Grading Basis ☐ Course Prerequisites ☒ Registration Restrictions
☒ Course Description ☒ Course Prerequisites ☒ General Education Requirement
☒ Test Score Prerequisites ☒ Co-requisites ☒ Cross-Listed/Stacked
☒ Automatic Restrictions ☒ Co-requisites ☒ Cross-Listed Coordination Signature
☒ Other ☐ Level ☒ College ☐ Major ☐ Cross-Listed Coordination Signature

9. Repeat Status No ☒ # of Repeats N/A ☒ Max Credits N/A

10. Grading Basis
☒ A-F ☐ P/NP ☐ NG

11. Implementation Date
From: Fall/2015 To: 9999

12. ☐ Cross Listed with ☐ Stacked with

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impacted Program/Course Date of Coordination Chair/Coordinator Contacted
1. OEC in CADD for Building Construction 2/9/15 Donald M. Ketner, Jr.
2. 
3. 

Initiator Name (typed): J. Ellen McKay Initiator Signed Initials: __________________ Date: __________

13b. Coordination Email Date: 2/11/15
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison Date: 2/10/15

14. General Education Requirement
Mark appropriate box:
☒ Oral Communication ☒ Written Communication ☒ Quantitative Skills ☐ Humanities
☐ Fine Arts ☒ Social Sciences ☒ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Continues skill development in CADD (computer-aided design and drafting) at an advanced level for the production of architectural, civil, structural, mechanical, and electrical drawings used in construction. Includes 3-D space, shading, rendering, and animation techniques.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
N/A

16b. Co-requisite(s) (concurrent enrollment required)
N/A

16c. Automatic Restriction(s) [College ☐ Major ☑ Class ☐ Level]

16d. Registration Restriction(s) (non-codable)
N/A

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The Occupational Endorsement Certificate (OEC) in CADD is being deleted. This course was only required for the OEC and will no longer be necessary.

Initiator (faculty only) Date
J. Ellen McKay

Initiator (TYPE NAME) Date

Disapproved 

Approved 

Disapproved 

Approved 

Disapproved 

Approved 

Disapproved 

Approved 

Disapproved 

Approved 

Disapproved 

Approved 

Disapproved 

Approved 

Disapproved 

Approved
Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>CT CTC</th>
<th>1b. Division</th>
<th>ACDT Division of Construction</th>
<th>Design Technology</th>
<th>1c. Department</th>
<th>AET</th>
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</thead>
<tbody>
<tr>
<td>2. Course Prefix</td>
<td>AET</td>
<td>3. Course Number</td>
<td>A283</td>
<td>4. Previous Course Prefix &amp; Number</td>
<td>N/A</td>
<td>5a. Credits/CEUs</td>
</tr>
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</table>

6. Complete Course Title
CADD Software Customization
Abbreviated Title for Transcript (30 character)

7. Type of Course
- [x] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

8. Type of Action:
- [ ] Add
- [ ] Change
- [x] Delete

If a change, mark appropriate boxes:
- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Automatic Restrictions
- Class
- Level
- College
- Major
- Other
- (please specify)

9. Repeat Status
- choose one
- # of Repeats
- N/A
- Max Credits
- N/A

10. Grading Basis
- [x] A-F
- [ ] P/NP
- [ ] NG

11. Implementation Date
- semester/year
- From: Fall/2015
- To: /9999

12. Cross Listed with
- [ ] Stacked with
- Cross-Listed Coordination Signature

13a. Impacted Courses or Programs:
List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. OEC in CADD for Building Construction</td>
<td>2/9/15</td>
<td>Donald M. Ketner, Jr.</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): J. Ellen McKay
Initiator Signed Initials: _________
Date:________________

13b. Coordination Email
- Date: 2/11/15
- submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
- Date: 2/10/15

14. General Education Requirement
Mark appropriate box:
- [ ] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [ ] Humanities
- [ ] Social Sciences
- [ ] Natural Sciences
- [ ] Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Presents the skills and knowledge necessary to modify and customize the CADD user interface, create customized CADD features for diverse domains, and manage CADD standards and projects in professional environments.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
- [ ] N/A

16b. Co-requisite(s) (concurrent enrollment required)
- [ ] N/A

16c. Automatic Restriction(s)
- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

16d. Registration Restriction(s) (non-codable)
- [ ] N/A

17. [ ] Mark if course has fees

18. [ ] Mark if course is a selected topic course

19. Justification for Action
The Occupational Endorsement Certificate (OEC) in CADD is being deleted. This course was only required for the OEC and will no longer be necessary.

Initiator (faculty only)
J. Ellen McKay
Initiator SIGNATURE

Initiator (TYPE NAME)

[ ] Approved
[ ] Disapproved

Dean/Director of School/College
Date

[ ] Approved
[ ] Disapproved

Undergraduate/Graduate Academic
Board Chair
Date

[ ] Approved
[ ] Disapproved

Provost or Designee
Date

Page 183
<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>AET</td>
</tr>
</tbody>
</table>

2. Complete Program Title/Prefix

**Occupational Endorsement Certificate in CADD for Building Construction**

3. Type of Program

Choose one from the appropriate drop down menu:

- Undergraduate: Occupational Endorsement Certificate
- Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☑ Yes or ☐ No

4. Type of Action:

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>PREFIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Delete</td>
<td>☐ Inactivate</td>
</tr>
</tbody>
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5. Implementation Date (semester/year)

From: Fall/2015 To: 9999

6a. Coordination with Affected Units

Department, School, or College: AET

Initiator Name (typed): J. Ellen McKay
Date: ________________
Initiator Signed Initials: __________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)

Date: 2/11/15

6c. Coordination with Library Liaison

Date: 2/10/15

7. Title and Program Description - Please attach the following:

- ☑ Cover Memo
- ☑ Catalog Copy in Word using the track changes function

8. Justification for Action

Delete as a result of prioritization review and lack of enrollment.

Initiator (faculty only)

J. Ellen McKay
Initiator (TYPE NAME)

Disapproved
Department Chair
Date

Approved
Undergraduate/Graduate Academic Board Chair
Date

Disapproved
Provost or Designee
Date

Disapproved
Dean/Director of School/College
Date

Approved
1a. School or College
CT CTC

1b. Department
AET

2. Complete Program Title/Prefix
Structural Technology Certificate

3. Type of Program
Choose one from the appropriate drop down menu:
Undergraduate: or Graduate: CHOOSE ONE

This program is a Gainful Employment Program:
☒ Yes or ☐ No

4. Type of Action:

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>PREFIX</th>
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<tbody>
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<tr>
<td>☑ Change</td>
<td>☐ Change</td>
</tr>
<tr>
<td>☐ Delete</td>
<td>☐ Inactivate</td>
</tr>
</tbody>
</table>

5. Implementation Date (semester/year)
From: Fall/2015 To: 9999

6a. Coordination with Affected Units
Department, School, or College: AET
Initiator Name (typed): J. Ellen McKay
Initiator Signed Initials: __________

Date: __________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)
Date: 2/11/15

6c. Coordination with Library Liaison
Date: 2/10/15

7. Title and Program Description - Please attach the following:
☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
Updating terminology in certificate title, changes in required course titles as per AET Advisory Committee.

Initiator (faculty only) Date

J. Ellen McKay
Initiator (TYPE NAME)

☒ Approved ☐ Disapproved
☐ Approved ☐ Disapproved
☐ Approved ☐ Disapproved

Dean/Director of School/College Date

Undergraduate/Graduate Academic Board Chair Date

Provost or Designee Date

☑ Approved ☐ Disapproved
☐ Approved ☐ Disapproved
☐ Approved ☐ Disapproved

Department Chair Date

College/School Curriculum Committee Chair Date
Undergraduate Certificate in Structural Technology

- Overview
- Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

Admission Requirements
Satisfy the Application and Admission Requirements for Undergraduate Certificate Programs.

Advising
Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements
- Satisfy the General University Requirements for Undergraduate Certificates.
- Complete the Program Requirements below.
- Achieve a grade of C or better in all courses required for the certificate.

Program Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET A101</td>
<td>Fundamentals of CADD for Building Construction</td>
<td>4</td>
</tr>
<tr>
<td>AET A102</td>
<td>Methods of Building Construction</td>
<td>3</td>
</tr>
<tr>
<td>AET A131</td>
<td>Structural Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A181</td>
<td>Intermediate CADD for Building Construction</td>
<td>4</td>
</tr>
<tr>
<td>AET A231</td>
<td>Structural Technology</td>
<td>4</td>
</tr>
<tr>
<td>AET A286</td>
<td>Design Project</td>
<td>4</td>
</tr>
<tr>
<td>ENGL A111</td>
<td>Introduction to Composition</td>
<td>3</td>
</tr>
<tr>
<td>MATH A105</td>
<td>Intermediate Algebra</td>
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Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>COMM A111</td>
<td>Fundamentals of Oral Communication</td>
</tr>
<tr>
<td>COMM A235</td>
<td>Small Group Communication</td>
</tr>
<tr>
<td>COMM A237</td>
<td>Interpersonal Communication</td>
</tr>
<tr>
<td>COMM A241</td>
<td>Public Speaking</td>
</tr>
</tbody>
</table>

Total Credits 31

A total of 31 credits is required for the certificate.

- See more
at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-structuraldrafting/#sthash.j3Jtf6Q3.dpuf
Undergraduate Certificate in Structural Technology

- Overview
- Learning Outcomes

Program Student Learning Outcomes

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drawing conventions including symbols, line types, line weights, and dimension styles as applicable to structural construction drawings.
- Visualize and translate drawing information to actual physical objects and completed structural construction projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health, and safety of the public.
- Understand the role, duties, and responsibilities of the members of the design team, including the working relationship between technicians and structural engineers.
- Understand the structural elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed structural project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.

- See more at: [http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-structuraldrafting/#learningoutcomestext](http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-structuraldrafting/#learningoutcomestext)
Undergraduate Certificate in Structural Drafting Technology

- Overview
- Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

Admission Requirements

Satisfy the Application and Admission Requirements for Undergraduate Certificate Programs.

Advising

Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements

- Satisfy the General University Requirements for Undergraduate Certificates.
- Complete the Program Requirements below.
- Achieve a grade of C or better in all courses required for the certificate.

Program Requirements

<table>
<thead>
<tr>
<th>Course</th>
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<td>Fundamentals of CADD for Building Construction</td>
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<tr>
<td>AET/CM A102</td>
<td>Methods of Building Construction</td>
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<td>Structural Drafting Construction Drawings</td>
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</tr>
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<td>AET A181</td>
<td>Intermediate CADD for Building Construction</td>
<td>4</td>
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<tr>
<td>AET/CM A231</td>
<td>Structural Technology</td>
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<td>AET A286</td>
<td>Design Project</td>
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<tr>
<td>ENGL A111</td>
<td>Introduction to Composition</td>
<td>3</td>
</tr>
<tr>
<td>MATH A105</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following: 3 credits

- COMM A111 Fundamentals of Oral Communication
- COMM A235 Small Group Communication
- COMM A237 Interpersonal Communication
- COMM A241 Public Speaking

Total Credits 31

A total of 31 credits is required for the certificate.

- See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-structuraldrafting/#sthash.j3Jtf6Q3.dpuf
Undergraduate Certificate in Structural Drafting Technology

- Overview
- Learning Outcomes

Program Student Learning Outcomes

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drafting conventions including symbols, line types, line weights, and dimension styles as applicable to structural drafting and construction drawings.
- Visualize and translate drawing information to actual physical objects and completed structural construction projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health, and safety of the public.
- Understand the role, duties, and responsibilities of the members of the design team, including the working relationship between technicians and structural engineers.
- Understand the structural elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed structural project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.

See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-structuraldrafting/#learningoutcomestext
Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College
   CT CTC

1b. Department
   AET

2. Complete Program Title/Prefix
   Mechanical & Electrical Technology Certificate

3. Type of Program
   Choose one from the appropriate drop down menu:
   Undergraduate: or Graduate: CHOOSE ONE
   This program is a Gainful Employment Program: ☒ Yes or ☐ No

4. Type of Action:
   PROGRAM
   ☐ Add
   ☑ Change
   ☐ Delete
   PREFIX
   ☐ Add
   ☐ Change
   ☐ Inactivate

5. Implementation Date (semester/year)
   From: Fall/2015 To: 9999

6a. Coordination with Affected Units
   Department, School, or College: AET
   Initiator Name (typed): J. Ellen McKay
   Initiator Signed Initials: _________
   Date: __________________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)
   Date: 2/11/15

6c. Coordination with Library Liaison
   Date: 2/10/15

7. Title and Program Description - Please attach the following:
   ☑ Cover Memo ☑ Catalog Copy in Word using the track changes function

8. Justification for Action
   Updating terminology in certificate title, changes in required course titles as per AET Advisory Committee.

Initiator (faculty only)
J. Ellen McKay
Initiator (TYPE NAME)

☑ Approved ☐ Disapproved
Dean/Director of School/College
Date

☑ Approved ☐ Disapproved
Undergraduate/Graduate Academic Board Chair
Date

☑ Approved ☐ Disapproved
Provost or Designee
Date

☑ Approved ☐ Disapproved
Department Chair
Date

☑ Approved ☐ Disapproved
College/School Curriculum Committee Chair
Date

☑ Approved ☐ Disapproved
J. Ellen McKay
Initiator (TYPE NAME)

☑ Approved ☐ Disapproved
Date
Undergraduate Certificate in Mechanical and Electrical Technology

- Overview
- Learning Outcomes

Program Student Learning Outcomes
The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drawing conventions including symbols, line types, line weights, and dimension styles as applicable to the mechanical/electrical construction drawings.
- Visualize and translate drawing information to actual physical objects and completed mechanical/electrical construction projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health and safety of the public.
- Understand the role, duties and responsibilities of the members of the design team, including the working relationship between technicians and mechanical and electrical engineers.
- Understand the mechanical/electrical elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed mechanical/electrical project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.

- See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-mechanicalelectricaldrafting/#learningoutcomestext
Undergraduate Certificate in Mechanical and Electrical Drafting Technology

• Overview
• Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

Admission Requirements
Satisfy the Application and Admission Requirements for Undergraduate Certificate Programs.

Advising
Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements
• Satisfy the General University Requirements for Undergraduate Certificates.
• Complete the Program Requirements below.
• Achieve a grade of C or better in all courses required for the certificate.

Program Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>AET CM A102</td>
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<td>AET CM A142</td>
<td>Mechanical and Electrical Technology</td>
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<td>AET A143</td>
<td>Mechanical and Electrical Drafting Construction Drawings</td>
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<td>Intermediate CADD for Building Construction</td>
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<td>Design Project</td>
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<td>ENGL A111</td>
<td>Introduction to Composition</td>
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<td>MATH A105</td>
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<td>Select one of the following:</td>
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<td>COMM A111</td>
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<td>COMM A235</td>
<td>Small Group Communication</td>
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<tr>
<td>COMM A237</td>
<td>Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>COMM A241</td>
<td>Public Speaking</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 31
A total of 31 credits is required for the certificate.
- See more
at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-mechanicalandelectricaldrafting/#sthash.Wi5kJmqJ.dpuf

Undergraduate Certificate in Mechanical and Electrical Drafting Technology

- Overview
- Learning Outcomes

Program Student Learning Outcomes

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drafting-drawing conventions including symbols, line types, line weights, and dimension styles as applicable to the mechanical/electrical drafting/construction drawings.
- Visualize and translate drawing information to actual physical objects and completed mechanical/electrical construction projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health and safety of the public.
- Understand the role, duties and responsibilities of the members of the design team, including the working relationship between technicians and mechanical and electrical engineers.
- Understand the mechanical/electrical elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed mechanical/electrical project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.

- See more
at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-mechanicalandelectricaldrafting/#learningoutcomestext
Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College
CT CTC

1b. Department
AET

2. Complete Program Title/Prefix
Civil Technology Certificate

3. Type of Program
Choose one from the appropriate drop down menu:
Undergraduate: or Graduate: CHOOSE ONE

This program is a Gainful Employment Program: ☑ Yes or ☐ No

4. Type of Action:

<table>
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<tr>
<td>☑ Change</td>
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<tr>
<td>☐ Delete</td>
<td>☐ Inactivate</td>
</tr>
</tbody>
</table>

5. Implementation Date (semester/year)
From: Fall/2015 To: /9999

6a. Coordination with Affected Units
Department, School, or College: AET

Initiator Name (typed): J. Ellen McKay
Initiator Signed Initials: 

Date: __________________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)
Date: 2/11/15

6c. Coordination with Library Liaison
Date: 2/10/15

7. Title and Program Description - Please attach the following:

☑ Cover Memo ☑ Catalog Copy in Word using the track changes function

8. Justification for Action
Updating terminology in certificate title and changes in required course titles as per AET Advisory Committee.

Initiator (faculty only) Date
J. Ellen McKay

☑ Approved ☐ Disapproved Dean/Director of School/College Date

☑ Approved ☐ Disapproved Undergraduate/Graduate Academic Date

☑ Approved ☐ Disapproved Board Chair Date

☑ Approved ☐ Disapproved Provost or Designee Date

☑ Approved ☐ Disapproved Department Chair Date

☑ Approved ☐ Disapproved College/School Curriculum Committee Chair Date
Undergraduate Certificate in Civil Technology

- **Overview**
- **Learning Outcomes**
  
  *Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.*

**Admission Requirements**
Satisfy the Application and Admission Requirements for Undergraduate Certificate Programs.

**Advising**
Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

**Graduation Requirements**
- Satisfy the General University Requirements for Undergraduate Certificates.
- Complete the Program Requirements below.
- Achieve a grade of C or better in all courses required for the certificate.

**Program Requirements**

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<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AET A101</td>
<td>Fundamentals of CADD for Building Construction</td>
<td>4</td>
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<tr>
<td>AET A102</td>
<td>Methods of Building Construction</td>
<td>3</td>
</tr>
<tr>
<td>AET A111</td>
<td>Civil Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A181</td>
<td>Intermediate CADD for Building Construction</td>
<td>4</td>
</tr>
<tr>
<td>AET A213</td>
<td>Civil Technology</td>
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<td>AET A286</td>
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<tr>
<td>ENGL A111</td>
<td>Introduction to Composition</td>
<td>3</td>
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<tr>
<td>MATH A105</td>
<td>Intermediate Algebra</td>
<td>3</td>
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<tbody>
<tr>
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<td>Fundamentals of Oral Communication</td>
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<tr>
<td>COMM A235</td>
<td>Small Group Communication</td>
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<td>COMM A237</td>
<td>Interpersonal Communication</td>
</tr>
<tr>
<td>COMM A241</td>
<td>Public Speaking</td>
</tr>
</tbody>
</table>

**Total Credits**

A total of 31 credits is required for the certificate.
Undergraduate Certificate in Civil Technology

- Overview
- Learning Outcomes

Program Student Learning Outcomes
The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drawing conventions including symbols, line types, line weights and dimension styles as applicable to civil construction drawings.
- Visualize and translate drawing information to actual physical objects and completed civil construction projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health and safety of the public.
- Understand the role, duties and responsibilities of the members of the design team, including the working relationship between technicians and civil engineers.
- Understand the civil elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed civil project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.

- See more at:
  http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-civildrafting/#sthash.zhUWlozz.dpuf

- See more at:
  http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-civildrafting/#learningoutcomestext
Undergraduate Certificate in Civil Drafting Technology

- Overview
- Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

Admission Requirements
Satisfy the Application and Admission Requirements for Undergraduate Certificate Programs.

Advising
Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements
- Satisfy the General University Requirements for Undergraduate Certificates.
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<td>AET/CM A102</td>
<td>Methods of Building Construction</td>
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Total Credits 31

A total of 31 credits is required for the certificate.

- See more at: [http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-civildrafting/#sthash.zhUWlozz.dpuf](http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-civildrafting/#sthash.zhUWlozz.dpuf)
Program Student Learning Outcomes

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

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- Demonstrate knowledge of drafting conventions including symbols, line types, line weights and dimension styles as applicable to civil construction drawings.
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- Demonstrate critical thinking and problem solving skills in the employment environment.

- See more at: [http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-civildrafting/#learningoutcomestext](http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-civildrafting/#learningoutcomestext)
1a. School or College
CT CTC

1b. Department
AET

2. Complete Program Title/PREFIX
Architectural Technology Certificate

3. Type of Program
Choose one from the appropriate drop down menu:
Undergraduate: or Graduate: Undergraduate Certificate

This program is a Gainful Employment Program:
☒ Yes or ☐ No

4. Type of Action:
PROGRAM
☐ Add
☒ Change
☐ Delete

PREFIX
☐ Add
☐ Change
☐ Inactivate

5. Implementation Date (semester/year)
From: Fall 2015 To: 9999

6a. Coordination with Affected Units
Department, School, or College: AET
Initiator Name (typed): J. Ellen McKay
Initiator Signed Initials: __________
Date: __________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)
Date: 2/11/15

6c. Coordination with Library Liaison
Date: 2/10/15

7. Title and Program Description - Please attach the following:
☒ Cover Memo ☒ Catalog Copy in Word using the track changes function

8. Justification for Action
Updating terminology in certificate title, changes in required course titles as per AET Advisory Committee.

Initiator (faculty only) J. Ellen McKay
Date

Initiator (TYPE NAME)

☐ Approved ☐ Disapproved
Dean/Director of School/College Date

☐ Approved ☐ Disapproved
Undergraduate/Graduate Academic Board Chair Date

☐ Approved ☐ Disapproved
Provost or Designee Date
Undergraduate Certificate in Architectural Technology

- **Overview**
- **Learning Outcomes**

*Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.*

**Admission Requirements**

Satisfy the [Application and Admission Requirements for Undergraduate Certificate Programs](#).

**Advising**

Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

**Graduation Requirements**

- Satisfy the [General University Requirements for Undergraduate Certificates](#).
- Complete the Program Requirements below.
- Achieve a grade of C or better in all courses required for the certificate.

**Program Requirements**

**Core Courses**

- **AET A101** Fundamentals of CADD for Building Construction 4
- **AET A102** Methods of Building Construction 3
- **AET A121** Architectural Construction Drawings 3
- **AET A123** Codes and Standards 3
- **AET A181** Intermediate CADD for Building Construction 4
- **AET A286** Design Project 4
- **ENGL A111** Introduction to Composition 3
- **MATH A105** Intermediate Algebra 3

**Oral Communication Course**

Select one of the following: 3

- **COMM A111** Fundamentals of Oral Communication
- **COMM A235** Small Group Communication
- **COMM A237** Interpersonal Communication
- **COMM A241** Public Speaking
A total of 30 credits is required for the certificate.
- See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-architecturaldrafting/#sthash.TtAl3PfJ.dpuf

**Undergraduate Certificate in Architectural Technology**

- **Overview**
- **Learning Outcomes**

**Program Student Learning Outcomes**

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drawing conventions including symbols, line types, line weights and dimension styles as applicable to architectural construction drawings.
- Visualize and translate drawing information to actual physical objects and completed architectural projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health and safety of the public.
- Understand the role, duties and responsibilities of the members of the design team, including the working relationship between technicians and architects.
- Understand the architectural elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed architectural project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.
- See more at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-architecturaldrafting/#learningoutcomestext
Undergraduate Certificate in Architectural Drafting Technology

- Overview
- Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

Admission Requirements
Satisfy the Application and Admission Requirements for Undergraduate Certificate Programs.

Advising
Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements
- Satisfy the General University Requirements for Undergraduate Certificates.
- Complete the Program Requirements below.
- Achieve a grade of C or better in all courses required for the certificate.

Program Requirements

Core Courses

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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>Fundamentals of CADD for Building Construction</td>
<td>4</td>
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<td>AET/CM A102</td>
<td>Methods of Building Construction</td>
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<td>Architectural Drafting Construction Drawings</td>
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<td>3</td>
</tr>
<tr>
<td>MATH A105</td>
<td>Intermediate Algebra</td>
<td>3</td>
</tr>
</tbody>
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Oral Communication Course

Select one of the following: 3

<table>
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</tbody>
</table>

Total Credits 30
A total of 30 credits is required for the certificate.
- See more
at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-architecturaldrafting/#sthash.TtAI3PfJ.dpuf

Undergraduate Certificate in Architectural Drafting Technology

- Overview
- Learning Outcomes

Program Student Learning Outcomes

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drafting drawing conventions including symbols, line types, line weights and dimension styles as applicable to architectural drafting construction drawings.
- Visualize and translate drawing information to actual physical objects and completed architectural projects.
- Understand the role and purpose of building codes and standards as they pertain to the life, health and safety of the public.
- Understand the role, duties and responsibilities of the members of the design team, including the working relationship between technicians and architects.
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- Demonstrate critical thinking and problem solving skills in the employment environment.

- See more
at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/certificate-architecturaldrafting/#learningoutcomestext
Program/Prefix Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

1a. School or College
   CT CTC

1b. Department
   AET

2. Complete Program Title/Prefix
   Architectural and Engineering Technology/AET

3. Type of Program
   Choose one from the appropriate drop down menu:
   Undergraduate: or Graduate: Associate of Applied Science
   CHOOSE ONE

   This program is a Gainful Employment Program:
   ☑ Yes or ☐ No

4. Type of Action:
   PROGRAM
   ☐ Add
   ☑ Change
   ☐ Delete

   PREFIX
   ☐ Add
   ☑ Change
   ☐ Inactivate

5. Implementation Date (semester/year)
   From: Fall/2015 To: /9999

6a. Coordination with Affected Units
   Department, School, or College: AET, CM
   Initiator Name (typed): J. Ellen McKay
   Initiator Signed Initials: _________
   Date:________________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)
   Date: 2/11/15

6c. Coordination with Library Liaison
   Date: 2/10/15

7. Title and Program Description - Please attach the following:
   ☑ Cover Memo ☑ Catalog Copy in Word using the track changes function

8. Justification for Action
   Revise catalog copy to reflect curriculum actions.

   ______________________________________________________     __________
   Initiator (faculty only)         Date
   J. Ellen McKay
   Initiator (TYPE NAME)
   ☑ Approved      ☐ Disapproved
   Dean/Director of School/College
   Date

   ☑ Approved      ☐ Disapproved
   Undergraduate/Graduate Academic
   Date

   ☑ Approved      ☐ Disapproved
   Board Chair
   Date

   ☑ Approved      ☐ Disapproved
   Provost or Designee
   Date

   ☑ Approved      ☐ Disapproved
   Department Chair
   Date

   ☑ Approved      ☐ Disapproved
   College/School Curriculum Committee Chair
   Date
Associate of Applied Science in Architectural and Engineering Technology

- Overview
- Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

Admission Requirements
Satisfy the Application and Admission Requirements for Associate Degree Programs.

Advising
Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements
- Satisfy the General University Requirements for Associate of Applied Science Degrees.
- Complete the General Course Requirements for Associate of Applied Science Degrees (15 credits). As part of the General Course Requirements, GEOL A111 is recommended.
- Complete the Program Requirements below.
- Achieve a grade of C or better in all courses required for the AAS degree.

Program Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET A101</td>
<td>Fundamentals of CADD for Building Construction</td>
<td>4</td>
</tr>
<tr>
<td>AET A102</td>
<td>Methods of Building Construction</td>
<td>3</td>
</tr>
<tr>
<td>AET A111</td>
<td>Civil Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A121</td>
<td>Architectural Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A123</td>
<td>Codes and Standards</td>
<td>3</td>
</tr>
<tr>
<td>AET A131</td>
<td>Structural Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A142</td>
<td>Mechanical and Electrical Technology</td>
<td>4</td>
</tr>
<tr>
<td>AET A143</td>
<td>Mechanical and Electrical Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A181</td>
<td>Intermediate CADD for Building Construction</td>
<td>4</td>
</tr>
<tr>
<td>AET A213</td>
<td>Civil Technology</td>
<td>4</td>
</tr>
</tbody>
</table>
**Associate of Applied Science in Architectural and Engineering Technology**

- **Overview**
- **Learning Outcomes**

**Program Student Learning Outcomes**

The specific educational outcomes that support the program objectives are to produce graduates who are able to:

- Demonstrate skill and proficiency in computer-aided drafting and design (CADD) and 3-D modeling.
- Demonstrate knowledge of drawing conventions including symbols, line types, line weights, and dimension styles as applicable to the design discipline.
- Visualize and translate drawing information to actual physical objects and completed construction components.
- Understand the role and purpose of building codes and standards as they pertain to the life, health, and safety of the public.
- Understand the role, duties, and responsibilities of the members of the design team, including the working relationship between technicians and professionals.
- Understand the elements of the construction document set and the role of construction documents as communication tools for the construction contract.
- Understand the construction process from the transformation of an idea or need into a completed project.
- Demonstrate communication skills to be successful in the employment environment.
- Demonstrate critical thinking and problem solving skills in the employment environment.

*This course satisfies the General Course Requirements.*

A total of 60 credits is required for the degree.

- See more at: [http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/aas-architecturalengineeringtechnology/#text](http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/aas-architecturalengineeringtechnology/#text)
Associate of Applied Science in Architectural and Engineering Technology

Overview

Learning Outcomes

Admission to this program at Matanuska-Susitna College is currently suspended. Contact the college for more information.

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Advising

Certain courses require prerequisites or faculty permission. Call (907) 786-6465 for further information.

Graduation Requirements

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Complete the General Course Requirements for Associate of Applied Science Degrees (15 credits). As part of the General Course Requirements, GEOL A111 is recommended.

Complete the Program Requirements below.

Achieve a grade of C or better in all courses required for the AAS degree.

Program Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AET/CM A101</td>
<td>Fundamentals of CADD for Building Construction</td>
<td>4</td>
</tr>
<tr>
<td>AET/CM A102</td>
<td>Methods of Building Construction</td>
<td>3</td>
</tr>
<tr>
<td>AET A111</td>
<td>Civil Design Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET A121</td>
<td>Architectural Design Construction Drawings</td>
<td>3</td>
</tr>
<tr>
<td>AET/CM A123</td>
<td>Codes and Standards</td>
<td>3</td>
</tr>
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<td>AET A131</td>
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<td>AET A213</td>
<td>Civil Technology</td>
<td>4</td>
</tr>
<tr>
<td>AET/CM A231</td>
<td>Structural Technology</td>
<td>4</td>
</tr>
<tr>
<td>AET A286</td>
<td>Design Project</td>
<td>4</td>
</tr>
</tbody>
</table>
MATH A105  Intermediate Algebra *  3

Electives  3

AET A295  Architectural and Engineering Technology Internship (strongly recommended)

* This course satisfies the General Course Requirements.

A total of 60 credits is required for the degree.

- See more
at: http://catalog.uaa.alaska.edu/undergraduateprograms/ctc/architecturalandengineeringtechnology/aas-architecturalengineeringtechnology/#text
Explanation of Changes

The Construction Management program was originally designed to incorporate existing Architectural and Engineering courses into both the AASC M and the BSCM degrees by cross listing the courses as AET/CM courses.

This resulted in confusion about cross-listed sections and student capacity limits for each class. This was especially problematic when these courses were a part of a Department of Labor grant to support distance delivery of the subject courses. The cross listing and both distance and face-to-face deliveries resulted in four sections in each class.

To remedy this problem, CM is proposing to uncross list these courses and to simply require the AET courses as a part of the CM degrees.
**Course Action Request**

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>CM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM</td>
<td>A101</td>
<td>NA</td>
<td>4 credits</td>
<td>(2+4)</td>
</tr>
</tbody>
</table>

6. **Complete Course Title**

**Fundamentals of CADD for Building Construction**

Fnd. of CADD for Bldg. Const.

**Abbreviated Title for Transcript (30 character)**

<table>
<thead>
<tr>
<th>7. Type of Course</th>
<th>8. Type of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>Add or Change or Delete</td>
</tr>
</tbody>
</table>

9. **Repeat Status No**

<table>
<thead>
<tr>
<th># of Repeats</th>
<th>Max Credits</th>
</tr>
</thead>
</table>

10. **Grading Basis**

| A-F | P/NP | NG |

11. **Implementation Date**

From: Fall/2015 To: /9999

12. **Cross Listed with**

13a. **Impacted Courses or Programs**: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. UAF</td>
<td>3/4/15</td>
<td>Galen Johnson</td>
</tr>
</tbody>
</table>

Initiator Name (typed): Don Tipton

Initiator Signed Initials: _________ Date:________________

13b. **Coordination Email**

submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu)

13c. **Coordination with Library Liaison**

Date: 2/10/2015

14. **General Education Requirement**

Mark appropriate box:

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. **Course Description** *(suggested length 20 to 50 words)*

Introduces basic CADD (computer-aided drafting and design) skills necessary in civil, architectural, structural, mechanical and electrical drafting within the construction industry. Defines the working relationship between design and construction professionals and drafters/technicians.

16a. **Course Prerequisite(s)** *(list prefix and number or test code and score)*

MATH A105 with a minimum grade of C or concurrent enrollment.

16b. **Co-requisite(s)** *(concurrent enrollment required)*

NA

16c. **Automatic Restriction(s)**

- College
- Major
- Class
- Level

16d. **Registration Restriction(s)** *(non-codable)*

Proof of eligibility for placement into ENGL A111. Appropriate SAT, ACT, or UAA-approved Math Placement Test scores may be used in lieu of MATH A105.

17. **Mark if course has fees**

18. **Mark if course is a selected topic course**

19. **Justification for Action**

Remove cross listed status for this course. Delete CM A101. AET A101 will be required for the AAS and BS Construction Management degrees.
<table>
<thead>
<tr>
<th>Role</th>
<th>Approved</th>
<th>Disapproved</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiator (faculty only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don Tipton</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiator (TYPE NAME)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dean/Director of School/College</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department Chair</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate/Graduate Academic Board Chair</td>
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<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provost or Designee</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1a. School or College
CT CTC

1b. Division
ACDT Division of Construction Design Technology

1c. Department
CM

2. Course Prefix
CM

3. Course Number
A102

4. Previous Course Prefix & Number
NA

5a. Credits/CEUs
3 credits

5b. Contact Hours
(3+0)

6. Complete Course Title
Methods of Building Construction Methods of Bldg. Const.

7. Type of Course
☒ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action:
☐ Add or ☐ Change or ☒ Delete

If a change, mark appropriate boxes:
☐ Prefix ☐ Course Number ☐ Contact Hours ☐ Repeat Status
☐ Grading Basis ☐ Cross-Listed/Stacked ☐ Course Prerequisites ☐ Co-requisites
☐ Test Score Prerequisites ☐ Registration Restrictions ☐ General Education Requirement
☐ Automatic Restrictions ☐ College ☐ Level ☐ Major ☐ Class ☐ Level
☐ Other (please specify)

9. Repeat Status No # of Repeats Max Credits

10. Grading Basis
☒ A-F ☐ P/NP ☐ NG

11. Implementation Date
From: Fall/2015 To: 9999

12. ☐ Cross Listed with
☐ Stacked with

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Management</td>
<td>2/16/2015</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>Architectural and Engineering Technology</td>
<td>2/16/2015</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>UAF</td>
<td>3/4/2015</td>
<td>Galen Johnson</td>
</tr>
</tbody>
</table>

Initiator Name (typed): Don Tipton
Initiator Signed Initials: __________
Date: __________

13b. Coordination Email
Date: 3/4/2015

13c. Coordination with Library Liaison
Date: 2/10/2015

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Introduces basic knowledge of building materials, technical specifications, techniques, and systems. Outlines structural systems, construction processes, and assemblies. Includes a field project involving student team research of current Alaskan building type.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
NA

16b. Co-requisite(s) (concurrent enrollment required)
NA

16c. Automatic Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16d. Registration Restriction(s) (non-codable)
NA

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
Remove cross listed status for this course. Delete CM A102. AET A102 will be required for the AAS and BS Construction Management degrees.

Initiator (faculty only) Date
Don Tipton

Initiator (TYPE NAME) Date

☐ Approved ☐ Disapproved
Dean/Director of School/College Date

☐ Approved ☐ Disapproved
Undergraduate/Graduate Academic Board Chair Date

☐ Approved ☐ Disapproved
Provost or Designee Date
### Course Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course**

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>CT CTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. Division</td>
<td>ACDT Division of Construction Design Technology</td>
</tr>
<tr>
<td>1c. Department</td>
<td>CMGT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Course Number</td>
<td>A123</td>
</tr>
<tr>
<td>4. Previous Course Prefix &amp; Number</td>
<td>NA</td>
</tr>
<tr>
<td>5a. Credits/CEUs</td>
<td>3 credits</td>
</tr>
<tr>
<td>5b. Contact Hours</td>
<td>(Lecture + Lab) (3+0)</td>
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### Complete Course Title

**Codes and Standards**

Abbreviated Title for Transcript (30 character)

<table>
<thead>
<tr>
<th>7. Type of Course</th>
<th>Academic</th>
<th>Preparatory/Development</th>
<th>Non-credit</th>
<th>CEU</th>
<th>Professional Development</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>8. Type of Action:</th>
<th>Add</th>
<th>Change</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>If a change, mark appropriate boxes:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefix</td>
<td>Credits</td>
<td>Title</td>
<td>Grading Basis</td>
</tr>
<tr>
<td>Course Number</td>
<td>Contact Hours</td>
<td>Repeat Status</td>
<td>Cross-Listed/Stacked</td>
</tr>
<tr>
<td>Repeat Status</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Repeat Status No</th>
<th># of Repeats</th>
<th>Max Credits</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>10. Grading Basis</th>
<th>A-F</th>
<th>P/NP</th>
<th>NG</th>
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</table>

<table>
<thead>
<tr>
<th>11. Implementation Date</th>
<th>semester/year</th>
<th>From: Fall/2015</th>
<th>To: /9999</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>12.</th>
<th>Cross Listed with</th>
<th>Stacked with</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>13a. Impacted Courses or Programs:</th>
<th>List any programs or college requirements that require this course.</th>
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</tr>
<tr>
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</tr>
</tbody>
</table>

Initiator Name (typed): Don Tipton

Initiator Signed Initials: __________ Date: __________

| 13b. Coordination Email | Date: 3/4/2015 | submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu) |

| 13c. Coordination with Library Liaison | Date: 2/10/2015 |

<table>
<thead>
<tr>
<th>14. General Education Requirement</th>
<th>Oral Communication</th>
<th>Written Communication</th>
<th>Quantitative Skills</th>
<th>Humanities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark appropriate box:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fine Arts</td>
<td>Social Sciences</td>
<td>Natural Sciences</td>
<td>Integrative Capstone</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Course Description (suggested length 20 to 50 words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides an introduction and overview of the fundamental provisions of the building codes used for plan review, life-safety evaluation of buildings, and community development.</td>
</tr>
</tbody>
</table>

| 16a. Course Prerequisite(s) (list prefix and number or test code and score) | CM A101 and CM A102 |
| 16b. Co-requisite(s) (concurrent enrollment required) | NA |

<table>
<thead>
<tr>
<th>16c. Automatic Restriction(s)</th>
<th>College</th>
<th>Major</th>
<th>Class</th>
<th>Level</th>
</tr>
</thead>
</table>

| 16d. Registration Restriction(s) (non-codable) | NA |

<table>
<thead>
<tr>
<th>17.</th>
<th>Mark if course has fees</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>18.</th>
<th>Mark if course is a selected topic course</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>19. Justification for Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove cross listed status for this course. Delete CM A123. AET A123 will be required for the AAS and BS Construction Management degrees.</td>
</tr>
</tbody>
</table>

Initiator (faculty only) Don Tipton

Initiator Signed Initials: __________ Date: __________

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<tbody>
<tr>
<td>Provost or Designee</td>
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</table>
# Course Action Request

## University of Alaska Anchorage

**Proposal to Initiate, Add, Change, or Delete a Course**

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<th>3. Course Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CM</td>
<td>A142</td>
<td>NA</td>
<td>4 credits</td>
<td>(3+2)</td>
</tr>
</tbody>
</table>

## 6. Complete Course Title

**Mechanical and Electrical Technology**

**Mechanical & Electrical Technology**

Abbreviated Title for Transcript (30 character)

## 7. Type of Course

- [x] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

## 8. Type of Action

- [ ] Add
- [ ] Change
- [x] Delete

### If a change, mark appropriate boxes:

- [ ] Prefix
- [ ] Credits
- [ ] Title
- [ ] Grading Basis
- [ ] Course Description
- [ ] Test Score Prerequisites
- [ ] Automatic Restrictions
- [ ] Other (please specify)
- [x] Course Number
- [ ] Contact Hours
- [ ] Repeat Status
- [ ] Cross-Listed/Stacked
- [ ] Co-requisites
- [ ] Registration Restrictions
- [ ] General Education Requirement
- [ ] Class [x]
- [ ] Level [x]
- [ ] College [x]
- [ ] Major [x]

## 9. Repeat Status No

- [x] # of Repeats
- [ ] Max Credits

## 10. Grading Basis

- [x] A-F
- [ ] P/NP
- [ ] NG

## 11. Implementation Date

- [ ] semester/year
- [ ] From: Fall/2015
- [ ] To: /9999

## 12. Cross Listed with

- [ ] Stacked with

Cross-Listed Coordination Signature

## 13a. Impacted Courses or Programs

- List any programs or college requirements that require this course.

### Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

### Impacted Program/Course

<table>
<thead>
<tr>
<th>Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Management</td>
<td>2/16/2015</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>Architectural and Engineering Technology</td>
<td>2/16/2015</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>UAF</td>
<td>3/4/2015</td>
<td>Galen Johnson</td>
</tr>
</tbody>
</table>

Initiator Name (typed): Don Tipton
Initiator Signed Initials: _________
Date: __________

## 13b. Coordination Email

- [ ] Date: 3/4/2015
- [ ] submitted to Faculty Listserv: [ua-faculty@lists.uaa.alaska.edu](mailto:ua-faculty@lists.uaa.alaska.edu)

## 13c. Coordination with Library Liaison

- [ ] Date: 2/10/2015

## 14. General Education Requirement

- [ ] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [ ] Humanities
- [ ] Fine Arts
- [ ] Social Sciences
- [ ] Natural Sciences
- [ ] Integrative Capstone

## 15. Course Description

- [ ] Introduces the basic mechanical and electrical systems required in all buildings for the safety, health, comfort, and convenience of the occupants. Emphasizes design criteria, code requirements, interpretation of construction drawings and building energy usage.

## 16a. Course Prerequisite(s)

- (CM A101 and CM A102 and MATH A105) with minimum grade of C.

## 16b. Co-requisite(s)

- [x] (non-codable)

## 16c. Automatic Restriction(s)

- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

## 17. Mark if course has fees

- [ ]

## 18. Mark if course is a selected topic course

- [ ]

## 19. Justification for Action

- [ ] Remove cross listed status for this course. Delete CM A142. AET A142 will be required for the AAS and BS Construction Management degrees.

Initiator (faculty only)

<table>
<thead>
<tr>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Date</td>
</tr>
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</table>

Initiator (TYPE NAME)

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<tbody>
<tr>
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<td>Date</td>
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</table>

<table>
<thead>
<tr>
<th>Approved</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Provost or Designee</td>
<td>Date</td>
</tr>
</tbody>
</table>
Course Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course  

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1e. Department</th>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT CTC</td>
<td>CM</td>
<td>CM</td>
<td>A231</td>
<td>NA</td>
<td>4 credits</td>
<td>(2+4)</td>
</tr>
</tbody>
</table>

6. Complete Course Title  
Structural Technology  
Abbreviated Title for Transcript (30 character)  

7. Type of Course  
☑ Academic  
☐ Preparatory/Development  
☐ Non-credit  
☐ CEU  
☐ Professional Development  

8. Type of Action:  
☐ Add  
☐ Change  
☐ Delete  

If a change, mark appropriate boxes:  
☐ Prefix  
☐ Credits  
☐ Title  
☐ Grading Basis  
☐ Course Description  
☐ Test Score Prerequisites  
☐ Co-requisites  
☐ Automatic Restrictions  
☐ Class  
☐ Level  
☐ Major  
☐ College  
☐ Other (please specify)  

9. Repeat Status No  
☐ # of Repeats  
☐ Max Credits  

10. Grading Basis  
☐ A-F  
☐ P/NP  
☐ NG  

11. Implementation Date  
Semester/year  
From: Fall/2015  
To: 9/999  

12. ☐ Cross Listed with  
☐ Stacked with  

Cross-Listed Coordination Signature  

13a. Impacted Courses or Programs: List any programs or college requirements that require this course. 
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).  

<table>
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<td>Donald M. Ketner Jr.</td>
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<td>2/16/2015</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>UAF</td>
<td>3/4/2015</td>
<td>Galen Johnson</td>
</tr>
</tbody>
</table>

Initiator Name (typed): Don Tipton  
Initiator Signed Initials: _________  
Date: __________  

13b. Coordination Email  
Date: 3/4/2015  
submitted to Faculty Listserv: [uae-faculty@lists.uaa.alaska.edu](mailto:uae-faculty@lists.uaa.alaska.edu)  

13c. Coordination with Library Liaison  
Date: 2/10/2015  

14. General Education Requirement  
Mark appropriate box:  
☐ Oral Communication  
☐ Written Communication  
☐ Quantitative Skills  
☐ Social Sciences  
☐ Natural Sciences  
☐ Integrative Capstone  

15. Course Description (suggested length 20 to 50 words)  
Examines structural theory and the physical principles that underlie structural behavior. Includes the use of materials in a manner to maintain structural stability against such natural forces as gravity, wind, snow, and earthquakes. Covers connection details and code requirements for wood, steel and reinforced concrete.  

16a. Course Prerequisite(s) (list prefix and number or test code and score)  
(CM A101 and CM A102 and MATH A105) with minimum grade of C.  

16b. Co-requisite(s) (concurrent enrollment required)  
NA  

16c. Automatic Restriction(s)  
☐ College  
☐ Major  
☐ Class  
☐ Level  

16d. Registration Restriction(s) (non-codable)  
NA  

17. ☐ Mark if course has fees  

18. ☐ Mark if course is a selected topic course  

19. Justification for Action  
Remove cross listed status for this course. Delete CM A101. AET A101 will be required for the AAS and BS Construction Management degrees.  

Initiator (faculty only)  
Don Tipton  
Initiator Signed Initials: _________  
Date: __________  

Approved  
Disapproved  
Dean/Director of School/College  
Date  

Approved  
Disapproved  
Undergraduate/Graduate Academic  
Date  

Approved  
Disapproved  
Board Chair  
Date  

Approved  
Disapproved  
Provost or Designee  
Date  

215
# Proposal to Initiate, Add, Change, or Delete a Course

## Course Action Request

### University of Alaska Anchorage

**Statics and Strengths of Materials**

**Statics & Strengths of Mat.**

*Abbreviated Title for Transcript (30 character)*

### 1a. School or College

**CT CTC**

### 1b. Division

**ACDT Division of Construction**

**Design Technology**

### 1c. Department

**CMGT**

### 2. Course Prefix

**CM**

### 3. Course Number

**A331**

### 4. Previous Course Prefix & Number

**NA**

### 5a. Credits/CEUs

**3 credits**

### 5b. Contact Hours (Lecture + Lab)

**3+0**

### 6. Complete Course Title

**Statics and Strengths of Materials**

**Statics & Strengths of Mat.**

### 7. Type of Course

- [x] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

### 8. Type of Action

- [ ] Add
- [ ] Change
- [x] Delete

**If a change, mark appropriate boxes:**

- [ ] Prefix
- [x] Course Number
- [x] Credits
- [x] Title
- [x] Repeat Status
- [ ] Grading Basis
- [ ] Cross-Listed/Stacked
- [ ] Course Description
- [ ] Co-requisites
- [ ] Test Score Prerequisites
- [ ] Registration Restrictions
- [ ] Automatic Restrictions
- [x] General Education Requirement
- [x] Other CCG & Catalog (please specify)

### 9. Repeat Status

**No**

**# of Repeats**

**Max Credits**

### 10. Grading Basis

- [x] A-F
- [ ] P/NP
- [ ] NG

### 11. Implementation Date

**From:** Fall/2015

**To:** 9999

### 12. Cross Listed with

- [ ] Stacked with

**Cross-Listed Coordination Signature**

### 13a. Impacted Courses or Programs

*List any programs or college requirements that require this course.*

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Course Action Request</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bachelor of Science in Construction Management</td>
<td>2/18/2015</td>
<td>Donald M. Ketner</td>
</tr>
<tr>
<td>2. Physics Department</td>
<td>2/23/2015</td>
<td>Dr. Katherine Rawlins, Chair</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Initiator Name (typed): Don Tipton**

**Initiator Signed Initials:** _________ **Date:** __________

### 13b. Coordination Email

**Date:** 3/4/2015

**Submitted to Faculty Listserv:** [uaa-faculty@lists.uaa.alaska.edu](mailto:uaa-faculty@lists.uaa.alaska.edu)

### 13c. Coordination with Library Liaison

**Date:** diagrams2/16/2015

### 14. General Education Requirement

**Mark appropriate box:**

- [ ] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [x] Humanities
- [ ] Social Sciences
- [ ] Natural Sciences
- [ ] Integrative Capstone

### 15. Course Description

**Suggested length 20 to 50 words**

- Analyzes forces and the mechanics of materials for structural elements and structural assemblies. Includes the fundamentals of statics; stress, strain, and deformation; shear and bending moment stresses in beams; and column analysis.

**CM A231 and MATH A108 or MATH 109**

### 16a. Course Prerequisite(s)

**CM A231 and MATH A108 or MATH 109**

### 16b. Co-requisite(s)

**NA**

### 16c. Automatic Restriction(s)

- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

### 16d. Registration Restriction(s)

**NA**

### 17. Mark if course has fees

- [ ] Mark if course is a selected topic course

### 18. Justification for Action

**PHYS A123 and A123L are selectives for this degree. Therefore, to require these courses as prerequisites would make these courses required for the degree since CM A331 is required for the BSCM degree. This prerequisite was not deleted when PHYS A123 and A123L were changed to selectives as was intended at the time of the change. These courses are not required to be successful in CM A331. Both the CCG and catalog have been updated to reflect this change.**

### 19. Justification for Action

**Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).**

<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Dean/Director of School/College</th>
</tr>
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<tbody>
<tr>
<td>Don Tipton</td>
<td></td>
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**Initiator (TYPE NAME)**

- [ ] Approved
- [ ] Disapproved

<table>
<thead>
<tr>
<th>Department Chair</th>
<th>Date</th>
<th>Undergraduate/Graduate Academic</th>
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- [ ] Approved
- [ ] Disapproved

<table>
<thead>
<tr>
<th>College/School Curriculum Committee Chair</th>
<th>Date</th>
<th>Provost or Designee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- [ ] Approved
- [ ] Disapproved
University of Alaska Anchorage  
Community and Technical College  
Course Content Guide

I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Prefix: CM
C. Number: A331
D. Hours: 3 (3+0)
E. Course Title: Statics and Strengths of Materials
F. Basis: A-F
G. Date: Fall 2014
H. Cross-listed: N/A
I. Stacked: N/A
J. Description: Analyzes forces and the mechanics of materials for structural elements and structural assemblies. Includes the fundamentals of statics; stress, strain, and deformation; shear and bending moment stresses in beams; and column analysis.
K. Attributes: N/A
L. Prerequisites: CM A231 and [MATH A108 or MATH A109]

III. Course Level Justification. This course builds upon a foundation of knowledge established in CM A231.
IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.

Instructional Goal: To prepare Construction Management students with the fundamental concepts used in the design of building structures and civil works.

A. Instructional Goal:  To prepare Construction Management students with the fundamental concepts used in the design of building structures and civil works.

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Assessment Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>After successful completion of this course, the student will be able to do the following:</td>
<td>This outcome will be assessed by one or more of the following:</td>
</tr>
<tr>
<td>Relate structural building codes to the criteria for selection of structural systems.</td>
<td>Team project</td>
</tr>
<tr>
<td>Analyze forces through the use of free body and force vectors.</td>
<td>Written exam</td>
</tr>
<tr>
<td>Discriminate between statically determinate and statically indeterminate bodies.</td>
<td>Written exam</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

1.0 Safety Procedures
   1.1 University policies
   1.2 Course and lab procedures
   1.3 Emergency egress review

2.0 Building Structural Design and Engineering
   2.1 History of structural design
   2.2 Criteria for selection of structural systems
   2.3 Building codes regulating structures
   2.4 Units for engineering data

3.0 Forces
   3.1 Newton’s laws of motion
   3.2 Vectors
   3.3 Force systems

4.0 Static Equilibrium
   4.1 Moments
4.2 Couples  
4.3 Free body diagrams  
4.4 Equilibrium of a particle  
4.5 Equilibrium of a rigid body  

5.0 Statically Determinate and Indeterminate Bodies  

6.0 Analysis of Determinate Bodies  
   6.1 Trusses  
   6.2 Frames  
   6.3 Cables  
   6.4 Retaining walls  

7.0 Stress  
   7.1 Axial shear and bearing  
   7.2 Stress concentration  

8.0 Strain  
   8.1 Hooke’s law  
   8.2 Stress-strain diagrams  
   8.3 Mechanical properties of materials  

9.0 Properties of Section Profiles  
   9.1 Center of gravity and centroids of shapes  
   9.2 Moments of inertia  
   9.3 Section modulus  
   9.4 Radius of gyration  

10.0 Bending and Shear Stresses in Beams  
   10.1 Flexural strain and stress  
   10.2 Shear  
   10.3 Deflection  
   10.4 Bearing
stresses

11.0 Column Analysis
  11.1 Modes
  of failure
  11.2 End support
  conditions
  11.3 Axially
  loaded columns
  11.4 Combined loading and eccentricity

12.0 Building Loads
  12.1 Load
  tracing
  12.2 Load
  paths
  12.3
  Tributary
  areas

VI. Suggested Text:


VIII. Bibliography


* Denotes classic text.
### Course Action Request
#### University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<td>CT CTC</td>
<td>ACDT Division of Construction</td>
<td>CMGT</td>
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<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
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<th>5b. Contact Hours</th>
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<tr>
<td>CM</td>
<td>A495</td>
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<td>3 credits</td>
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<tr>
<td>Advanced Construction Management Internship</td>
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<tr>
<td>Adv. Const. Mgmt. Internship</td>
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<tr>
<td>Abbreviated Title for Transcript (30 character)</td>
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</table>

<table>
<thead>
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<th>7. Type of Course</th>
<th>8. Type of Action: [ ] Add or [ ] Change or [ ] Delete</th>
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<tr>
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<td>[ ] Add or [ ] Change or [ ] Delete</td>
</tr>
<tr>
<td>[ ] Preparatory/Development</td>
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</tr>
<tr>
<td>[ ] Non-credit</td>
<td>[ ] Add or [ ] Change or [ ] Delete</td>
</tr>
<tr>
<td>[ ] CEU</td>
<td>[ ] Add or [ ] Change or [ ] Delete</td>
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<tr>
<td>[ ] Professional Development</td>
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<th># of Repeats</th>
<th>Max Credits</th>
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<tr>
<th>10. Grading Basis</th>
<th>11. Implementation Date</th>
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<tr>
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<td>semester/year</td>
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<td>[ ] P/np</td>
<td>From: Fall/2015 To: /9999</td>
</tr>
<tr>
<td>[ ] NG</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>12. Cross Listed with</th>
<th>NA</th>
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</thead>
<tbody>
<tr>
<td>[ ] Stacked with</td>
<td>NA</td>
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### 13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

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<tbody>
<tr>
<td>Bachelor of Science, Construction Management</td>
<td>2/16/2015</td>
<td>Donald M. Ketner Jr.</td>
</tr>
<tr>
<td>Career Services Center</td>
<td>2/23/2015</td>
<td>Courtney Petrosky</td>
</tr>
</tbody>
</table>

### 13b. Coordination Email

Date: 3/4/2015

submitted to Faculty Listserv: uaa-faculty@lists.uaa.alaska.edu

### 13c. Coordination with Library Liaison

Date: 2/23/2015

### 14. General Education Requirement

Mark appropriate box:

<table>
<thead>
<tr>
<th>Oral Communication</th>
<th>Written Communication</th>
<th>Quantitative Skills</th>
<th>Humanities</th>
</tr>
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<tbody>
<tr>
<td>Fine Arts</td>
<td>Social Sciences</td>
<td>Natural Sciences</td>
<td>Integrative Capstone</td>
</tr>
</tbody>
</table>

### 15. Course Description (suggested length 20 to 50 words)

Provides career development and exploration through work experience in the field by placement in a construction management home or field office. Intern will perform duties directly related to construction management functions.

### 16a. Course Prerequisite(s) (list prefix and number or test code and score)

NONE

### 16b. Co-requisite(s) (concurrent enrollment required)

NA

### 16c. Automatic Restriction(s)

<table>
<thead>
<tr>
<th>College</th>
<th>Major</th>
<th>Class</th>
<th>Level</th>
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</thead>
</table>

### 16d. Registration Restriction(s) (non-codable)

Department Approval

### 17. Mark if course has fees

[ ]

### 18. Mark if course is a selected topic course

[ ]

### 19. Justification for Action

CM A295 is the internship required for the AASCM two-year degree. CM A495 is an advanced level internship required for the BSCM four-year degree. Students are obtaining more than adequate career experience in the CM A495 course and do not need 3 more internship credits that are not required for the four-year degree. Department approval of each internship is required to ensure that the career experience provided to each student is consistent with program and course learning outcomes. Both the CCG and catalog have been updated to reflect this change.

Initiator Name (typed): Don Tipton
Initiator Signed Initials: _________

Date: ____________________

Class Level

General Education Requirement

College Major

Other CCG & Catalog (please specify)

Mark if course has fees

Mark if course is a selected topic course

Justification for Action
<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Approved</th>
<th>Disapproved</th>
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<tbody>
<tr>
<td>Don Tipton</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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Initiator (TYPE NAME)

<table>
<thead>
<tr>
<th>Department Chair</th>
<th>Date</th>
<th>Approved</th>
<th>Disapproved</th>
</tr>
</thead>
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<td></td>
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<tr>
<th>College/School Curriculum Committee Chair</th>
<th>Date</th>
<th>Approved</th>
<th>Disapproved</th>
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<tbody>
<tr>
<td></td>
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I. Date of Initiation: Fall 2014

II. Curriculum Action Request
A. College: Community and Technical College
B. Course Prefix: CM
C. Course Number: A495
D. Number of Credits & Contact Hours: 3 (1+15)
E. Course Title: Advanced Construction Management Internship
F. Grading Basis: A-F
G. Implementation Date: Fall 2014
H. Cross-listed: N/A
I. Stacked: N/A
J. Course Description: Provides career development and exploration through work experience in the field by placement in a construction management home or field office. Interns perform duties directly related to construction management functions.

K. Course Attributes: N/A
L. Course Prerequisites: none
   Test Scores: N/A
   Course Co-requisite: N/A
   Registration Restriction: N/A
M. Course Fees: Yes

III. Course Level Justification. Develops advanced construction management skills by directly exposing students to construction management processes, techniques, and settings.

IV. Instructional Goals, Student Learning Outcomes and Assessment Measures.
A. Instructional Goal: To prepare Construction Management students with the fundamental concepts used in the design of building structures and civil works.
B. Student Learning Outcomes and Assessment Measures:

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Assessment Procedures</th>
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</table>
After successful completion of this course, the student will be able to do the following:

<table>
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<th>Outcome</th>
<th>Assessment Methods</th>
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<tr>
<td>Demonstrate workplace safety procedures and be able to recall workplace rules and regulations.</td>
<td>Employer evaluations, Graded discussion board, Graded daily journal</td>
</tr>
<tr>
<td>Demonstrate proficient use of construction management skills and concepts to successfully perform duties as assigned by your supervisor.</td>
<td>Employer evaluations, Graded discussion board, Graded daily journal</td>
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<tr>
<td>Demonstrate professional conduct in the workplace.</td>
<td>Employer evaluations</td>
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<tr>
<td>Compare and contrast classroom knowledge with real world field experience.</td>
<td>Graded discussion board, Graded daily journal, Final summary paper</td>
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<tr>
<td>Describe how workplace learning has improved the student's prospects for post-graduation employment.</td>
<td>Final summary paper</td>
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<tr>
<td>Define specific learning objectives as developed with your employer and self assess your performance in meeting these objectives.</td>
<td>Employer evaluations, Final summary paper</td>
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<tr>
<td>Describe how the relationship between college major and full-time permanent employment have been enhanced by the internship employment experience.</td>
<td>Graded discussion board, Final summary paper</td>
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V. Topical Course Outline

1.0 Safety and Procedures
   1.1 University policies
   1.2 General work site rules and safety policies
   1.3 Professional conduct

2.0 Internship Description and Goals
   2.1 Student internship description
   2.2 Learning objectives

3.0 Learning Contract
   3.1 Create learning objectives
   3.2 Describe work activities that will be used to meet learning objectives

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3.3 Develop on-the-job performance evaluation criteria

4.0 Writing Activities
- 4.1 Student introduction and career goals
- 4.2 Daily journal of work activities and hours
- 4.3 Company description and background
- 4.4 Weekly discussion board entries

VI. Suggested Text:

VIII. Bibliography


Hall.


* Denotes classic text.
## Purge List for the 2015-16 UAA Catalog, 2nd Read

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<tr>
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2015-16 Academic Purge List
March 10, 2015

To: Undergraduate Academic Board
Through: Kimberly Swiantek, Governance Coordinator
From: Dr. Diane K. Hanson, Chair, Department of Anthropology

Re: Purge List for the 2015-2016 UAA Catalog

The Purge List for the 2015-2016 UAA Catalog includes two undergraduate Anthropology courses. These are ANTH A365, Modern Human Diversity (last offered in Fall 2009) and ANTH A499, Senior Thesis in Anthropology.

Since ANTH A365 was last taught, we hired Dr. Ryan Harrod, who is offering courses created by his predecessor, Dr. Christine Hanson. We have reduced his course obligations at the 200 level so he could teach an additional upper division course. ANTH A365 is on the Spring 2016 schedule. We respectfully request that this course be retained.

ANTH A499 is available for any student intending to enter the honors program and requiring a senior thesis in anthropology. We request that this course be retained for those students wishing to participate in the honors program.
March 10, 2015

To: Graduate Academic Board
Through: Kimberly Swiantek, Governance Coordinator
From: Dr. Diane K. Hanson, Chair, Department of Anthropology

Re: Purge List for the 2015-2016 UAA Catalog

The Purge List for the 2015-2016 UAA Catalog includes one graduate Anthropology course: ANTH A690, Special Topics in Anthropology. This course is available should a specialist or an expert visiting UAA wish to teach a course of interest to our graduate students. We request that this course be retained to support our graduate program.
DATE: March 13, 2015

TO: Francisco Miranda, chair, Undergraduate Academic Board

FROM: Paola Banchero, associate professor and chair, Department of Journalism and Communication

RE: Purge list for Journalism and Public Communications and Communication courses

The Department of Journalism and Communication has reviewed the purge list for the 2015-16 academic year.

We would like to retain the following courses in our curriculum:

COMM A305 Intercultural Communication

JPC A314 Documentary Film and Filmmakers

JPC A492 JPC Senior Seminar

COMM A305 is an important course for Communication minors and conceivably for others interested in intercultural and international perspectives. Our Communication faculty is stretched thin at the moment, but it is a valuable course that we want to retain as part of our curriculum. We hope to offer in the near future.

JPC A314 has not been offered since it was developed in 2006, but we have the faculty on hand to teach it and have plans to offer this course in spring 2016.

We are teaching JPC A492 in fall 2015 and are pushing curriculum through the process to make this an integrative capstone course.

Thank you for the opportunity to consider these courses.
Dear UAA Undergraduate Review Board,

Sociology has two courses on the purge list:

SOC A342 Sexual/Marital/Family Life
SOC A405 Social Change

We would like to ask that SOC A342 not be purged. Although we have not been able to offer it since the faculty member who taught it retired some years ago, it is a course that we would like to teach in the future.

We are ok with SOC A405 being purged.

Please let me know if you need any more information.

Nelta Edwards, PhD
Associate Professor and Chair
Department of Sociology
University of Alaska Anchorage
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Anchorage, AK 99508-8198
(907) 786-4654

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