

Submit originals and one copy and electronic copy to **Governance/Faculty Senate Office**  
 See <http://www.uaf.edu/uafgov/faculty/cd> for a complete description of the rules governing curriculum & course changes.

**CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL**

**SUBMITTED BY:**

Department	Mechanical Engineering	College/School	CEM
Prepared by	Chuen-Sen Lin	Phone	474-5126
Email Contact	clin@alaska.edu	Faculty Contact	Chuen-Sen Lin

**1. COURSE IDENTIFICATION:**

Dept  Course #  No. of Credits

COURSE TITLE

**2. ACTION DESIRED:**

Change Course  If Change, indicate below what change. Drop Course

NUMBER	TITLE	DESCRIPTION
PREQUISITES		FREQUENCY OF OFFERING
CREDITS (including credit distribution)		COURSE CLASSIFICATION
CROSS-LISTED	Dept. <input type="text"/>	(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)
STACKED (400/600) Include syllabi.	Dept. <input type="text"/>	Course # <input type="text"/>
OTHER (please specify)	<input type="text"/>	

**3. COURSE FORMAT**

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

COURSE FORMAT:  1  2  3  4  5  6 weeks to full semester

(check all that apply)

OTHER FORMAT (specify all that apply)

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

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

H = Humanities  S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? YES  NO

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

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

**5. COURSE REPEATABILITY:**

Is this course repeatable for credit? YES  NO

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

How many times may the course be repeated for credit?  TIMES

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

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

ME401 Computer Aided Design and Manufacturing, 3 Credits,  
Introduction to the principles of computer aided design (CAD) and computer aided manufacturing (CAM). Entry-level applications of software and hardware in solid modeling, finite element modeling (FEM), rapid prototyping, and computer numerical control (CNC). Design Project.  
Prerequisites: ME321, ES331, and ES210. (1+4)

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

8. IS THIS COURSE CURRENTLY CROSS-LISTED?

YES/NO  No If Yes, DEPT  NUMBER

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

9. GRADING SYSTEM: Specify only one

LETTER  PASS/FAIL:

10. ESTIMATED IMPACT

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

To expand one CAD/CAM course (3 credits. Offering once every three semesters) into two courses, a CAD course (3 credits. Offering every other year) and a CAM course (3 credits. Offering every other year), the department work load will be increased by 1 credit-hour per year. For a department with 10 active faculty members, 1 credit-hour can easily be absorbed. The CAD course will be taught by the faculty member who was teaching the original CAD/CAM course. The CAM course will be taught by a faculty member, who has the experience in teaching manufacturing processes.

To expand one lab oriented course into two lab oriented courses, equipment required for teaching will also be different. As mentioned in the section of "Justification," the ME department has been soliciting new hardware and software since the beginning of teaching the DAD/CAM course. Currently, ME department has sufficient equipment for each of the CAD and CAM courses. For CAD, available teaching tools include SolidWorks (software of solid modeling, FEM, motion analysis, etc.), Virtual Lab (software of multi-body dynamics), 3D printer (a rapid prototyping machine). For CAM, available teaching tools include Camworks (software for process planning), two desk top CNC machine tools (a lathe and a milling machine), and two-state of the art automated high speed processing centers (Real world manufacturing tools: one for turning and the other for milling).

Considering space, ME department has a dedicated teaching laboratory (Duck333) for four courses which may need CAD/CAM facility. Students, who have projects needs to use CAD/CAM facility, can also use the room at time slots of no scheduled classes. It is expected to have no difficulty to schedule one more class to this lab class room.

All the courses mentioned above are elective courses.

11. LIBRARY COLLECTIONS

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

No  Yes  Teaching materials include handouts from the instructor and computer software and hardware manuals.

12. IMPACTS ON PROGRAMS/DEPTS:

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

Only ME Department will be affected.  
(Please see section 10 "Estimated Impact" for details.)

13. POSITIVE AND NEGATIVE IMPACTS

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

The Computer Aided Design and Computer Aided Manufacturing course will be replaced by two new courses: one is Computer Aided Design (ME404 CAD) and the Other is Computer Aided Manufacturing (ME405 CAM). The two new courses will cover more up-dated and advanced materials and make our curriculum follow the industrial technology development closer.

Negative impact: This action may have no to minimum effect on ME faculty teaching load.

### JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

The CAD/CAM course was first added to ME curriculum in 1999. The offer of a single Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) class instead of a CAD class and a CAM class separately (as offered by most of the other universities) was due to insufficient CAM facilities at that time. After 1999 the department has gradually increased its CAD/CAM capability through purchasing more hardware and leasing more software using funds received from external funding agencies and the University as well.

During the last few years, the enrollment of ME Department has been increased drastically and more students expressed their desire/needs of learning more in CAD/CAM applications. The department, therefore, decided to expand the current CAD/CAM course into two courses (i.e. a CAD course and a CAM course).

With separated CAD course and CAM course, more up-dated and advanced materials in CAD/CAM can be taught.

### APPROVALS:

	Date	
--	------	--

Signature, Chair, Program/Department of:

	Date	
--	------	--

Signature, Chair, College/School Curriculum Council for:

	Date	
--	------	--

Signature, Dean, College/School of:

	Date	
--	------	--

Signature of Provost (if applicable)

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

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

	Date	
--	------	--

Signature, Chair, UAF Faculty Senate Curriculum Review Committee

See justification in previous page *Am*

**JUSTIFICATION FOR ACTION REQUESTED**

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

The CAD/CAM course was first added to ME curriculum in 1999. The offer of a single Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) class instead of a CAD class and a CAM class separately (as offered by most of the other universities) was due to insufficient CAM facilities at that time. After 1999 the department has gradually increased its CAD/CAM capability through purchasing more hardware and leasing more software using funds received from external funding agencies and the University as well. During the last few years, the enrollment of ME Department has been increased drastically and more students expressed their desire/needs of learning more in CAD/CAM applications. The department, therefore, decided to expand the current CAD/CAM course into two courses (i.e. a CAD course and a CAM course). With separated CAD course and CAM course, more up-dated and advanced materials in CAD/CAM can be taught.

**APPROVALS:**

*Josh Lee* Date *2/14/2011*

Signature, Chair, Program/Department of: *Mechanical Engineering*

*Rebasmita Misra* Date *2/18/11*

Signature, Chair, College/School Curriculum Council for: *CEM*

*AAJ* Date *2/21/11*

Signature, Dean, College/School of: *CEM*

Signature of Provost (if applicable) Date

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

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

Signature, Chair, UAF Faculty Senate Curriculum Review Committee Date

Signature, Chair, UAF Faculty Senate Curriculum Review Committee

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

Signature, Chair, Program/Department of: Date

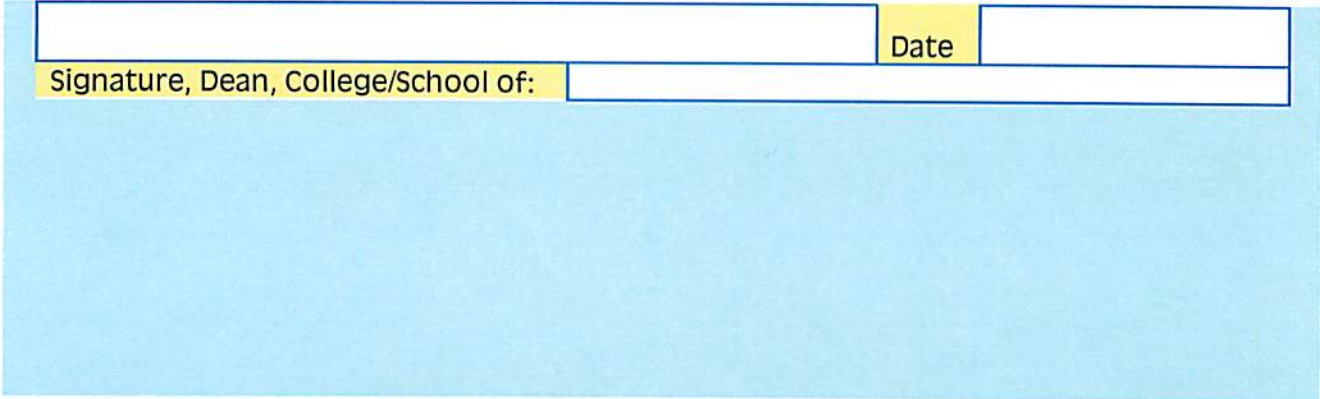
Signature, Chair, College/School Curriculum Council for: Date

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

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

Date

Signature, Dean, College/School of:



**ATTACH COMPLETE SYLLABUS (as part of this application).**

Note: The guidelines are online: <http://www.uaf.edu/uafgov/faculty/cd/syllabus.html>

The department and campus wide curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course change will be denied.

**SYLLABUS CHECKLIST FOR ALL UAF COURSES**

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

**1. Course information:**

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

**2. Instructor (and if applicable, Teaching Assistant) information:**

Name,  office location,  office hours,  telephone,  email address.

**3. Course readings/materials:**

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

**4. Course description:**

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

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

**6.  Student Learning Outcomes (more specific)**

**7. Instructional methods:**

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

**8. Course calendar:**

A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

**9. Course policies:**

Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

**10. Evaluation:**

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

**11. Support Services:**

Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

**12. Disabilities Services:**

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials.

State that you will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities."