

OCT 09 2014

FORMAT 1

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

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

SUBMITTED BY:

Department	Computer Science	College/School	CEM
Prepared by	Jon Genetti	Phone	474-5737
Email Contact	jdgenetti@alaska.edu	Faculty Contact	Same

1. ACTION DESIRED

(CHECK ONE):

Trial Course

New Course

X

2. COURSE IDENTIFICATION:

Dept

CS

Course #

600

No. of Credits

4

Justify upper/lower division
status & number of credits:

Required course for MS CS degree. Standard lecture format with 4 contact hours/week.

3. PROPOSED COURSE TITLE:

Professional Software Development

4. To be CROSS LISTED?

YES/NO

NO

If yes, Dept:

Course #

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

5. To be STACKED?*

YES/NO

NO

If yes, Dept.

Course #

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

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

6. FREQUENCY OF OFFERING:

Fall

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

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

Fall 2015

8. COURSE FORMAT:

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

COURSE FORMAT:
(check all that apply)

☐

1

☐

2

☐

3

☐

4

☐

5

X

6 weeks to full semester

OTHER FORMAT (specify)

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

Lecture

9. CONTACT HOURS PER WEEK:

4

LECTURE
hours/weeks

0

LAB
hours/week

0

PRACTICUM
hours/week

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

OTHER HOURS (specify type)

10. COMPLETE CATALOG DESCRIPTION including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):*Example of a complete description:***FISH F487 W, O Fisheries Management****3 Credits Offered Spring**

Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. *Prerequisites:* COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; ENGL F414; FISH F425; or permission of instructor. Cross-listed with NRM F487. (3+0)

CS F600 Professional Software Development**4 Credits Offered Fall**

Participate in a group project to explore the technical, social and ethical aspects of software development. Topics include: requirements engineering, enterprise-level data storage, software architecture, security, software testing, legal issues, computer ethics, risk management and project management. *Prerequisites:* CS F472. (4+0)

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

H = Humanities

S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form.

YES:

NO:

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

O = Oral Intensive, Format 6

W = Writing Intensive, Format 7

X = Baccalaureate Core

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

YES

NO

X

12. COURSE REPEATABILITY:

Is this course repeatable for credit?

YES

NO

X

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

How many times may the course be repeated for credit?

TIMES

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

CREDITS

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

CREDITS

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

LETTER:

X

PASS/FAIL:

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES

CS 472

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

15. SPECIAL RESTRICTIONS, CONDITIONS

16. PROPOSED COURSE FEES

\$0

Has a memo been submitted through your dean to the Provost for fee approval?

Yes/No

17. PREVIOUS HISTORY

Has the course been offered as special topics or trial course previously?

Yes/No

NO

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

18. ESTIMATED IMPACT

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

A faculty member to teach the course once a year and a classroom for the course. This offering will replace the yearly offering of CS 671.

19. LIBRARY COLLECTIONS

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

No

X

Yes

No library resources are necessary

20. IMPACTS ON PROGRAMS/DEPTS

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

This will only affect the MS and BS/MS programs in CS.

21. POSITIVE AND NEGATIVE IMPACTS

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

We had noticed declining interest in the MS mainly due to students being required to take 12 credits of mostly old topics. This course will contain important and leading-edge topics that MS graduates in CS need to know.

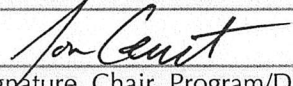
Having an updated MS degree will allow us to effectively advertise again. The two previous times (~2002 and 2005) resulted in over 10 new MS students per year. We expect similar results from a new advertising effort.

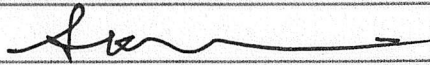
JUSTIFICATION FOR ACTION REQUESTED

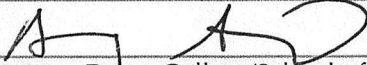
The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory.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

This course follows the senior capstone course sequence (CS 471/472) at the graduate level. The existing MS curriculum covers most of the parts of professional software development, but does not currently have an end-to-end application of that knowledge.

APPROVALS: Add additional signature lines as needed.

	Date	9/24/14
Signature, Chair, Program/Department of: CS		

	Date	9-25-14
Signature, Chair, College/School Curriculum Council for: CEM		

	Date	10/3/14
Signature, Dean, College/School of: CEM		

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

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

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

	Date	
Signature, Chair Faculty Senate Review Committee: <input type="checkbox"/> Curriculum Review <input type="checkbox"/> GAAC <input type="checkbox"/> Core Review <input type="checkbox"/> SADAC		

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

	Date	
Signature, Chair, Program/Department of:		

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

	Date	
Signature, Dean, College/School of:		

RECEIVED

NOV 3 2014

GOVERNANCE OFFICE

ATTACH COMPLETE SYLLABUS (as part of this application). This list is online at:

<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

The Faculty Senate 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 (or changes to it) may 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.) ☐ Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to publicize this.) Link to PDF summary of grading policy for "C":

http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf

11. Support Services:

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

12. Disabilities Services: Note that the phone# and location have been **updated**. <http://www.uaf.edu/disability/> The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

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

5/21/2013

CS 600 – Professional Software Development (4+0)

Fall 2015 Syllabus

Instructor: Dr. J. Genetti
Email: jdgenetti@alaska.edu
Office: 208-B Chapman
Office Phone: 474-5737
Office Hours: TBD or by appointment

Prerequisites: CS 472

Required Text: *Professional Software Development: Shorter Schedules and Higher Quality Products* by Steve McConnell, Addison-Wesley, 1st ed

Location/Time: TBD (4 lecture hours per week)

Catalog description: Participate in a group project to explore the technical, social and ethical aspects of software development. Topics include: requirements engineering, enterprise-level data storage, software architecture, security, software testing, legal issues, computer ethics, risk management and project management.

Course goals: To expand your knowledge of software engineering and project management, which will enable you to develop larger software systems. After reviewing software process models, your group of 2 or 3 students will develop a distributed software system during the semester using an Agile process.

Student Outcomes:

- Ability to determine software requirements for a software system
- Ability to develop a distributed software system using an Agile process
- Ability to create effective developer and end-user documentation
- Ability to effectively use a version control system to develop a software system
- Ability to create and deploy effective automated tests
- Ability to give effective oral technical presentations

Grading:

Group Project	60%
Mid-term Exam (2 hours in-class)	20%
Final Exam (during schedule time)	20%

Final grades will be assigned based on the following percentage intervals: A+ [95%,100%], A [90%,95%), A- [85%,90%), B+ [80%,85%), B [75%,80%), B- [70%,75%), C+ [65%,70%), C [60%,65%), C- [55%,60%), D+ [50%,55%), D [45%,50%), D- [40%,45%), F [0%,40%).

Assignments: Assignments will reinforce lecture concepts and demonstrate application of critical thinking skills. All assignments must be done on an individual basis. **LATE SUBMISSIONS WILL NOT BE ACCEPTED.**

Instructional Methods – Classroom lectures, case studies, software system development, written/oral assignments.

Policies: Examinations **must** be taken at the scheduled time. In particular, there **will be no** early final exams. You may discuss homework assignments with others, but everything you turn in **must** be your own work with appropriate citations.

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. I will work with the Office of Disabilities Services (208 Whitaker Bldg, 474-5655) to provide reasonable accommodation to students with disabilities.

Tentative Schedule: (lecture topics are listed in 1-hour increments to facilitate something other than 2 2-hour lectures per week)

Week	Lecture	Class topic (first hour)	Class Topic (second hour)	Assignment
1	1	Review Software Processes Models	Review Waterfall & Agile Models	Scrum #1
	2	Software Requirements Elicitation	Create groups & select project	
2	3	Software Requirements Analysis	Software Requirements Validation	
	4	Project Management for Agile Projects	Discuss/Review Scrum #1	
3	5	Local Data Storage for Applications	Enterprise-level Data Storage Systems	Scrum #2
	6	Database/Web Integration	Web application security	
4	7	Security By Design	Authentication and Authorization	
	8	Web Development Frameworks	Discuss/Review Scrum #1 Results, Scrum #2	
5	9	Test-driven Development	Requirements-based Testing	Scrum #3
	10	Automated Testing Environments	Software Review and Audits	
6	11	Release Testing	Ethics Case Study 1	
	12	Software Evolution	Discuss/Review Scrum #2 Results, Scrum #3	
7	13	Mobile Device Development	Mobile Device System Integration	Scrum #4
	14	GUI Design & Integration	GUI Building Tools	
8	15	Mid-term exam review	Discuss/Review Scrum #3 Results	
	16	Mid-term exam	Mid-term exam	
9	17	Discuss Mid-term Exam	Discuss/Review Scrum #4	Scrum #5
	18	Developer Documentation	End-User Documentation	
10	19	Testing Human-Computer Interface	Software Failure Case Study 1	
	20	Project Risk Management	Group Dynamics & Psychology	
11	21	Legal Issues	Discuss/Review Scrum #4 Results, Scrum #5	Scrum #6
	22	Buy vs. Develop Evaluation & Decisions	Ethics Case Study 2	
12	23	Software Quality Fundamentals	Software Quality Management Process	
	24	Software Refactoring	Software Failure Case Study 2	
13	25	Refactoring Costs & Risks	Discuss/Review Scrum #5 Results, Scrum #6	Project Due
	26	White-Box Testing	Black-Box Testing	
14	27	Software Architecture	Prescriptive vs. Descriptive Architecture	
	28	Software Architecture Evolution	Software Maintenance	
15	29	Legacy System Management	Discuss/Review Scrum #6 Results	
	30	Final group project presentations	Final group project presentations	
Final Exam during schedule final exam time				