51-GPCh.

Submit originals and one copy and electronic copy to Governance/Faculty Senate Office (email electronic copy to jbharvie@alaska.edu)

PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR)

SUBMITTED BY:

Department	Computer Science	College/School	CEM
Prepared by	Orion Lawlor	Phone	474-7678
Email Contact	lawlor@alaska.edu	Faculty Contact	Same

See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/ for a complete description of the rules governing curriculum & course changes.

PROGRAM IDENTIFICATION:

DEGREE PROGRAM	Computer Science
Degree Level: *(i.e., Certificate, A.A., A.A.S., B.A., B.S., M.A., M.S., Ph.D.)*	M.S.

A. CHANGE IN DEGREE REQUIREMENTS: *(Brief statement of program/degree changes and objectives)*

This reflects the first major change to the MS degree program in 20 years. We have combined the core content from four 3 credit courses into two 4 credit courses and removed out-of-date topics.

B. CURRENT REQUIREMENTS AS IT APPEARS IN THE CATALOG:

1. Complete the UAF admission process including the following:

a. Submit GRE general and computer science subject exam scores.

b. For teaching assistantship consideration, foreign applicants whose native language is not English must submit a TOEFL score of at least 600.

c. The department gives preference to applicants who also submit results of the Test of Spoken English.

2. Complete the general university requirements (page 200).

3. Complete the master's degree requirements (page 204).

4. Complete the following:

CS F611—Complexity of Algorithms 3

CS F631—Programming Language Implementation.........................3

CS F641—Advanced Systems Architecture 3

CS F671—Advanced Software Engineering..3

CS F690—Graduate Seminar and Project 3

CS F691—Graduate Seminar and Project 3

Approved electives...12

5. Minimum credits required 30

C. PROPOSED REQUIREMENTS AS IT WILL APPEAR IN THE CATALOG WITH THESE CHANGES:
(Underline new wording ~~strike through old wording~~ and use complete catalog format)

1. Complete the UAF admission process including the following:

a. Submit GRE general and computer science subject exam scores.

b. For teaching assistantship consideration, foreign applicants whose native language is not English must submit a TOEFL score of at least 600.

c. The department gives preference to applicants who also submit results of the Test of Spoken English.

2. Complete the general university requirements (page 200).

3. Complete the master's degree requirements (page 204).

4. Complete the following:

~~CS F611 — Complexity of Algorithms ....3~~

~~CS F631 — Programming Language Implementation..................3~~

~~CS F641 — Advanced Systems Architecture ....3~~

~~CS F671 — Advanced Software Engineering..................3~~

CS F600 — Professional Software Development 4

CS F601 — Algorithms, Architecture and Languages 4

CS F690 — Graduate Seminar and Project 3

CS F691 — Graduate Seminar and Project 3

Approved electives..................~~12~~16

5. Minimum credits required 30

D. ESTIMATED IMPACT

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

CS 600 and CS 601 will be taught in place of CS 631 and CS671 each year. CS 611 and CS 641 are stacked with the undergraduate course offerings.

E. 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)

The courses which will no longer be taught yearly (CS 611, CS 631, CS 641 and CS 671) are only used to satisfy the MS and BS/MS in Computer Science. We are requesting a similar change to the BS/MS program.

F. IF MAJOR CHANGE - ASSESSMENT OF THE PROGRAM:

Description of the student learning outcomes assessment process.)

Our SLOA process, based on students in the MS program, showed acceptable performance. The trigger that started the degree review was several years of low enrollment in the MS and MSE programs. (There was also a concurrent UAF program review that shut down the MSE program, but found the MS program ok for now.) While enrollments in CS have always been cyclical, ours did not seem to be following the national CS enrollments trends, which were increasing, as they had in the past.

We also talked to several employers of our MS graduates (RDI in Alaska, IBM, and the NSA) to see what skills they found lacking in recent graduates. The main response was more experience in developing larger software systems – which resulted in the proposal for CS 600 – Professional Software Development.

We combined the necessary theory topics into CS 601, which allows a more sustainable MS program, syncs with the growing BS/MS enrollments better, and allows students to specialize more than before.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize program/degree change 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 drop a course, is it because the material is covered elsewhere? 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 program is not compromised as a result.

Due to staffing, enrollment and budget constraints, CS 611 and CS 641 are currently stacked with CS 411 and CS 441. As noted in the Faculty Senate guidelines for stacking, this is not ideal, especially with a growing BS/MS enrollment.

CS 631 has always struggled with low enrollment. CS 671 has had reasonable graduate course enrollments since it was also required for the MSE program. The last UAF program review shut down the MSE, so CS 671 will have similar enrollment problems in the future.
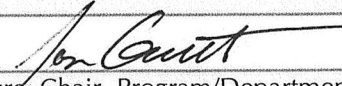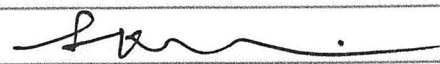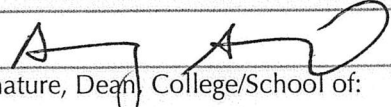
This proposal is a result of a two-year systematic review of the MS program. We reviewed other MS programs and determined what we could offer at UAF in a sustainable way. We also noted that BS/MS enrollments went from an occasional student to being our main source of students. The updated core content fits into two 4 credit courses and will not require additional teaching resources.

CS 631 and CS 671 can't be stacked and must be offered each year, even with low enrollment. Replacing them with CS 600 and CS 601 allows us to bring the topics up-to-date in a systematic way. We have redeployed resources from dropping the MSE degree into teaching two new required BS courses (CS 371 and CS 372) required by assessment and external accreditation. We are also able to offer two additional senior-level electives available to the BS, MS and BS/MS programs.

We believe this change will strengthen our MS program and provide a richer experience for our growing BS/MS students.

Also, 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 the next 2 years. We expect similar results from a new advertising effort.

APPROVALS: SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

Signature, Chair, Program/Department of: CS	Date	9/24/14
Signature, Chair, College/School Curriculum Council for: CEM	Date	9-25-14
Signature, Dean, College/School of: CEM	Date	10/3/14