February 1, 2013

Vice Chancellor J.W. Harrington
University of Washington, Tacoma
Box 358430

Dear J.W.:

Based upon the recommendations of the Faculty Council on Academic Policy, the Faculty Assembly has recommended approval of the revised program requirements for the Bachelor of Science degree in Computer Engineering and Systems. A copy of the change is attached.

I am writing to inform you that the Office of Academic Affairs is authorized to specify these requirements beginning autumn quarter 2013.

The new requirements should be incorporated in printed statements and in individual department websites as soon as possible. The *General Catalog* website will be updated accordingly by the Registrar's Office.

Sincerely yours,

Michael K. Young
President

Enclosure

cc: Ms. Zaide Chavez (with enclosure)
Mr. Robert Corbett (with enclosure)
Dr. Deborah H. Wiegand (with enclosure)
Ms. Virjean Edwards (with enclosure TINST-20121221)

UNIVERSITY OF WASHINGTON
CREATING AND CHANGING UNDERGRADUATE ACADEMIC PROGRAMS

After college/school/campus review, send a signed original and 1 copy to the Curriculum Office/FCAS, Box 355850.

For information about when and how to use this form: http://depts.washington.edu/uwcr/1503instructions.pdf

College/Campus: UW Tacoma	**Department/Unit**: Institute of Technology	**Date:** December 21, 2012

New Programs

☐ Leading to a Bachelor of _____ in _____ degree.

☐ Leading to a Bachelor of _____ degree with a major in _____.

☐ Leading to a _____ Option within the existing major in _____.

☐ Leading to a minor in _____

Changes to Existing Programs

☐ New Admission Requirements for the Major in _____ within the Bachelor of _____.

☐ Revised Admission Requirements for the Major in _____ within the Bachelor of _____.

■ Revised Program Requirements for the Major in **Computer Engineering & Systems** within the Bachelor of **Science**.

☐ Revised Requirements for the Option in _____ within the major in _____.

☐ Revised Requirements for the Minor in _____.

Other Changes

☐ Change name of program from _____ to _____.
☐ New or Revised Continuation Policy for _____.
☐ Eliminate program in _____.

Proposed Effective Date: **Quarter:** ■ Autumn ☐ Winter ☐ Spring ☐ Summer **Year:** 20 <u>13</u>

Contact Person: Zaide Chavez	Phone: 2-4659	Email: zaidec@uw.edu	Box: 358426

EXPLANATION OF AND RATIONALE FOR PROPOSED CHANGE

For new program, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support and departmental handouts. (*Use additional pages if necessary*).

This program change describes five courses that are being developed to specifically meet the needs of a computer engineering program. The Computer Engineering & Systems (CES) program received ABET accreditation on its first application allowing that certain preliminary courses and two advanced courses currently being taught in the Computer Science & Systems program be suitable for CES students. However, after several years of actual experience trying to provide CES students with applicable content that is not typically taught in the computer science program, the CES faculty have determined that the program's capacity to strengthen its quality and effectiveness would best be served with this group of course changes.

Computer Science Fundamentals:
TCES 203 – Programming Practicum to replace TCSS 305
TCES 372 – Computer Organization and Architecture to replace TCSS 371 and TCSS 372 to eliminate redundancy with other CES courses.
TCES 422 – Operating Systems for Engineers to replace TCSS 422 in order to provide more in-depth coverage of real-time OS which is more in line with the operating systems knowledge needed by computer engineers.

The CES faculty believes that these changes are warranted given the increased enrollments in the CES program (justifying these additional course sections). They also feel this will improve our ability to obtain re-accreditation by ABET when the time comes.

* The current TCSS courses in the introductory sequence (142, 143, and 305) are taught in the Java language, which is more appropriate for computer applications development as opposed to systems programming. The TCSS architecture sequence (371 & 372) were originally designed to include numerical representation and digital logic which are taught to engineering students in other courses in their program. Also these TCSS courses do not go into the level of detail in hardware that would be appropriate for engineering students. Similarly, the TCSS 422, operating systems course, is primarily oriented to general

purpose computing systems and tends to be light on details that engineers need to understand to work with real-time operating systems.

OTHER DEPARTMENTS AFFECTED

List all departments/units/ or co-accredited programs affected by your new program or changes to your existing program and acquire the signature of the chair/director of each department/unit listed. Attach additional page(s) if necessary. *See online instructions.

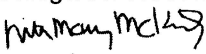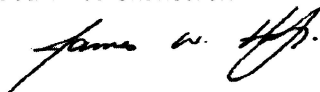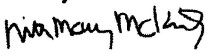| Department/Unit: N/A	Chair/Program Director:	Date:
Department/Unit: N/A	Chair/Program Director	Date:

CATALOG COPY

Catalog Copy as currently written. Include only sections/paragraphs that would be changed if your request is approved. Please cross out or otherwise highlight any deletions.

Please see attached.

PROPOSED CATALOG COPY

Reflecting requested changes (Include exact wording as you wish it to be shown in the printed catalog. Please underline or otherwise highlight any additions. If needed, attach a separate, expanded version of the changes that might appear in department publications). **Please note:** all copy will be edited to reflect uniform style in the General Catalog.

APPROVALS

Chair/Program Director:	Date: **01/03/2012**
College/School/Campus Curriculum Committee:	Date 1/28/2013
Dean/Vice Chancellor:	Date: 1/28/2013
Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair:	Date: 1/28/2013
POST TRI-CAMPUS APPROVAL (when needed)	
Faculty Council on Academic Standards/ General Faculty Organization/Faculty Assembly Chair:	Date:

Computer Science Fundamentals
- ~~TCSS 305 Programming Practicum~~
- TCSS 342 Data Structures
- TCSS 360 Software Development and Quality Assurance Techniques

Electrical Engineering Fundamentals
- TCES 215 Electrical Circuits
- TCES 312 Electronics and Analog Systems

Computer Systems
- TCSS 371 Machine Organization
- ~~TCSS 372 Computer Architecture~~
- ~~TCSS 422 Computer Operating Systems~~

Math / Theory
- TCSS 321 Discrete Structures I
- TCES 310 Linear Systems and Transforms
- TMATH 390 Probability and Statistics

Ethics and Society
- TCSS 325 Computers, Ethics and Society

Computer Engineering
- TCES 101 Introduction to Engineering I
- TCES 102 Introduction to Engineering II
- TCES 103 Introduction to Engineering III
- TCES 230 Introduction to Logic Design
- TCES 330 Digital System Design
- TCES 430 Advanced Digital System Design
- TCES 455 Devices and Controls
- TCSS 465 Embedded Real-Time Systems
- TCES 481 Senior Design Project I
- TCES 482 Senior Design Project II

Elective

- 5 credits (may include TCES, TCSS, 500 level TCSS, directed reading, directed research or internship course)

The Computer Engineering and Systems degree program has fewer elective choices than most because both computer science and electrical engineering courses are required. It is important for students enrolled in this program to meet regularly with a program adviser and plan course work carefully.

UWT – Institute of Technology
Computer Engineering and Systems Program
Current Catalog 2012/2013
Change 1503
Starting in Autumn 2014

Computer Science Fundamentals
- TCES 203 Programming Practicum (will replace TCSS 305)
- TCSS 342 Data Structures
- TCSS 360 Software Development and Quality Assurance Techniques

Electrical Engineering Fundamentals
- TCES 215 Electrical Circuits
- TCES 312 Electronics and Analog Systems

Computer Systems
- TCSS 371 Machine Organization
- TCES 372 Computer Organization and Architecture (will replace TCSS 372)
- TCSS 422 Operating Systems for Engineers (will replace TCSS 422)

Math / Theory
- TCSS 321 Discrete Structures I
- TCES 310 Linear Systems and Transforms
- TMATH 390 Probability and Statistics

Ethics and Society
- TCSS 325 Computers, Ethics and Society

Computer Engineering
- TCES 101 Introduction to Engineering I
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- TCES 230 Introduction to Logic Design
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