INSTITUTE OF TECHNOLOGY
UNIVERSITY OF WASHINGTON, TACOMA

Faculty/Staff Meeting Minutes - DRAFT
Friday, May 13, 2005

Attending: J. Tenenberg; D. Chinn; G. Mobus; F. Johnson; J. Roshan; S. Chung; I. Bichindaritz; L. Crum; C. McGaughey; S. Hanks; S. Rondeau; C. Randazzo; M. Rosenfeld; A. Fry; D. McLane; J. Burkett; C. Calo; J. Burley; L. Lyon-Banks.

1. **Announcements:**

   Women in Computer Science Roundtable – Thursday, May 19, SCI 309, 9:30 – 11:00am

   Seminar Series with guest speaker George Mobus – Wed, May 25, PNK 104, 12: 50 – 1:40 pm

   Founder's Day Awards Ceremony – Wednesday, May 25, Carwein Auditorium, 4:00pm

   Spring Extended Faculty Meeting/Workshop with CTC Partners - Friday, June 3, Cherry Parkes, 10:00 –12 (meeting); 1:00 – 4:00pm (workshop)

   Old Director Out to Pasture Reception – Monday, June 6, Tacoma Room, 4:30 – 6:30pm

   Spring Party (Stress Test Deck) – Thursday, June 9, Andrew's Home

   Commencement – Friday, June 10th, Puyallup Fair Grounds
   Institute Board meeting – Thursday, June 16, 9:00 – 11:30 am, Cherry Parkes Conference Room

2. **Approval of Minutes:**
   4/29/05- Attachment I

3. **Old Business:**
   A. **Integrating Writing into the Curriculum – Update on Dr. John Bean, Professor of English at Seattle University, visiting the UWT campus in Fall 2005.**
   Dr. Bean has been invited to speak our department on integrating writing into the curriculum. The date of his visit will depend on his schedule for the fall.

   B. **MS in CSS Courses Only Option Update**
   Graduate School Manager of Academic Programs Augustine McCaffery has confirmed that our adding a course-only option requires only information notification to the Graduate School. I only need to provide a description of the new option, when it takes effect, and the graduate faculty vote for the record. So, it is effectively approved.

   The graduate committee faculty vote results are: Approved-6, Disapprove-0, Abstain-0. L. Crum will inform the Graduate School of the description of the new option and the faculty vote. This item was considered to be a non urgent. G. Mobus will talk to L. Sessoms in regards to details of this option.

   C. **Planning of the Port of Tacoma Visit to UWT campus on Tuesday, May 17, 11:00am – 2:00pm, Hosted by CSS and Env Sci.**
   We need to decide what the agenda will be. I propose: 1) a tour of the laboratories of both programs with short demonstrations, 2) lunch with a few short talks including an overview of our academic

programs and an overview of the UW Center for Information Assurance and Cybersecurity, and Env Sci topics 3) further discussions of mutual interests.

Pat Spakes, Jack Nelson, and Carol Van Natta plan to make appearances.

The Port of Tacoma would like to support UW, Tacoma as we are considered a resource for them. The Port would like to be competitive and using our graduates would be a way for them to become more competitive. The Port has challenges with transport and scheduling. They are willing to provide funding to students that help the Port overcome these challenges. Security is another issue for them.

The faculty approved the proposed agenda for the Port of Tacoma's visit to the UWT campus.

4. New Business:

A. Faculty Council on Promotion and Tenure (FCPT) – Tracy Thompson

Presentation of the FCPT webpage and discussion of P&T issues.

Tracy referred to the web page link:
http://www.tacoma.washington.edu/faculty_assembly/Promotion_Tenure.htm
She notes that as a department, establishing criteria for the CSS faculty was needed and that is determined within the department (internally). She pointed out that Appendix B is a good description for the procedures. Volume 2 Chapter 24 & 25 are general guidelines. A possible addition to the site may include a sample of an external letter. This would provide a guide of what the external letter should look like.

Faculty was to take a look at the content of the site and send comments and/or suggestions to Josh, Steve or Tracy.

B. Undergraduate Curriculum Business

a) Changing prerequisites of CSS electives for Students pursing Minor

In order to open up some CSS electives to the Minor in Applied Computing students and to the BA students, the prerequisites for those electives need to be changed. I have spoken with the instructors for these classes about these changes, and they support the changes.

The proposed changes are:
450 Graphics: old prereq of 360 to new prereq of 360 OR 310 – supported by Isabelle
475 Entrepreneurship: old prereq of 343 to new prereq of 360 OR 310 – supported by Andrew
481 Cyber Security: old prereq of 422 to new prereq of 342 OR 312 (may be taken concurrently with 312) – supported by Don

Notes: Remember that 310 is Computational Problem Solving and that 312 is Computer Networks and the Internet. Recall also that 310 is a prereq for 312.

Bichindaritz reported that the Undergraduate committee propose to the full faculty changing the following courses to TINST from TCSS (452, 307, 401 and 301). There was a concern that 301 and 452 did not need this change given that 301 will no longer be offered however, offering a 400 level writing course is currently being worked on.

This discussion lead to the notion that we need to offer more "soft" courses. This topic will need to be addressed at some point.

The faculty approved to changing TCSS 307 and TCSS 401 to TINST 307 and TINST 401; The faculty approved to changing the prerequisite on TCSS 475 from 343 to 360 by a vote of: Approved-10, Disapprove-0, Abstain-0.

b) Impact of Dropping TCSS 301 on the General Education Requirement

Our admission requirement is that students must have:

10 credits of VLPA
10 credits of I&S
15 credits of Natural World
10 credits of Writing.

For graduation, they need:

15 credits of VLPA
15 credits of I&S
15 credits of Natural World
12 credits of Writing.

TCSS 425 satisfies either 5 credits of VLPA or 5 credits of I&S
TCSS 301 satisfies 5 credits of VLPA and 5 credits of Writing

Now that students will not be required to take TCSS 301, students could have both a writing and either a VLPA or a I&S deficiency.

Proposed: We should explicitly state as CSS program requirements: 5 credits of VLPA or I&S and 2 credits of Writing are required. They need to be covered in program electives if they are not covered elsewhere.

L. Crum reported that this was endorsed by the Undergraduate committee. The full faculty voted to unanimously approve the proposal.

C. Fall Retreat

Jack Nelson advises that the University Faculty Fellows program will almost certainly be scheduled for Friday, September 9 through Friday, September 16. Local UWT Faculty Fellows program will occur either this week or the subsequent week. We are asked not to schedule our retreat during these two weeks. We need a report from our Retreat Committee.

D. Faculty Review

The Professorial faculty met in closed session.

Adjourn

UNIVERSITY OF WASHINGTON, TACOMA
COMPUTING AND SOFTWARE SYSTEMS

Proposal for a Minor in Applied Computing
(Version 1.5 – February 12, 2005)

Rationale

UWT students outside the CSS program are, as a practical matter, unable to take our courses. This is due to the difficult prerequisite sequence (142, 143, 320) required to take even our entry-level courses. There is evidence of demand outside the program, both anecdotal, and as evidenced by enrollment in the few service courses we have offered in the recent past. UWT students want some additional exposure to computing, but do not want to take a rigorous programming sequence – nor do their educational goals require it. A significant and growing number of people have exposure to and interest in information systems, but will probably not program them regularly.

On a more practical level, our educational mission should extend beyond our own students, and on an even more practical level we are in a position where overall enrollments at UWT are expected to grow dramatically, and ours are not. We can either find a way to serve the educational needs of the larger UWT community, or risk becoming irrelevant or worse. This proposal is one way of doing so.

We have already moved in the direction of reaching a broader constituency, through service courses we have or will soon offer:

TCSS 307 – Internet Technologies
TCSS 452 – Human/Computer Interfaces
TCSS 490 – Introduction to Computing Systems (Dual Admission)
TCSS 407 – Computing in a Social Context

These are good steps, but

- we lack a framework that will draw students to take courses from us
- our courses go so far in the non-technical direction that they fail to meet the need for "lightly technical" classes that students need to complement their major disciplines (e.g. GIS, ES, Business/IS)
- without some sort of official framework or other incentive to take the class(es) (like a transcript notation), we will have trouble attracting students to them.

Finally, there is a tremendous amount of enthusiasm campus wide to develop cross-program educational offerings, and establishing a vital set of minors is a good way to help with that. We can take the lead in that mission.

It should be noted that there already is a CSS minor available, which requires 143, 342, 343, 360, and two additional CSS courses. This proposal would not replace that minor, which would continue as a more "programming-oriented" option.

Basic Structure and Mission

UWT minors typically consist of 25 to 35 credits, in a combination of foundation courses (2 or 3) and electives (2 or 3) that are typically selected from the program's regular offerings. In most cases our electives will not be suitable for non-majors, but a few (452, 407) would benefit both majors and non-majors.

The educational goal of the minor is typically to provide the student with a little depth and a little breadth. In the case of computer science, the depth would a better understanding of the technology (computer organization and programming, networks and communication, data management). The breadth would provide educational experiences that span the area between computing and the student's major discipline (452, 407). Computing-related courses in other programs would be relevant here, as would independent study or capstone courses.

The main challenge in starting the minor will be to offer sufficient flexibility to students, while at the same time not over-burdening our faculty with new courses (and new course preps).

The proposal is:

- the minor consists of five courses, three "depth" courses and two "breadth" courses
- we offer the following (new) "depth" courses
    - computational problem solving and computing fundamentals (TINST310)
    - database management and data analysis (TINST311)
    - computer networks and the Internet (TINST312)
- we offer a portfolio of "breadth" courses that to whatever extent possible are also suitable electives for our majors. These courses might include
    - human/computer interaction
    - computing in a social context
    - media computing (http://coweb.cc.gatech.edu/mediaComp-plan)
    - an informatics course targeted to non-majors
    - information security
    - gaming technologies
    - computing courses in other programs
    - independent study and capstone experiences

To earn the minor the student would complete the three depth courses and two breadth courses, at least one of which would have to be a TCSS course. (This requirement would allow a student to "double count" one course with a computing-related course in another program, but not two.)

SUMMARY	
Depth	**Breadth**
Problem solving and fundamental (310; 5 CR)	One CSS breadth course (5 CR) AND
Database mgt and data analysis (311; 5CR)	Second CSS breadth course OR
Computer networks and the Internet (312; 5 CR)	Independent study OR
	Computing course in other program

Fluency and Programming Courses

The course TINST 310 has been approved by the faculty for Autumn 2005 with the following course description:

- This course covers the fundamental framework for developing computational solutions to a variety of problems encountered in the world. Computational problems are everywhere and modern life could not go on without means to routinely solve these kinds of problems. The course first develops the concept of a computational problem; not all problems are solved computationally. However, many real-world problems are amenable to computational solutions. This course then explores the methods of analyzing and characterizing problems, and the methods by which a computational solution can be developed. Computer programming, as a method for specifying and implementing a solution, is introduced, but is not the central feature of this course. Various types of programming are explored and compared. The mechanisms used to implement computation are introduced in order to understand how computers work and how the software interacts with the hardware to produce a result.

Database Management and Data Analysis

The course TINST 311 has been approved by the faculty for Autumn 2005 with the following course description:

- Databases provide powerful systems and methods for transforming data into valuable information. Professionals from any discipline, from arts and sciences to business alike, benefit from learning how to manage information in databases, whether for their independent practice or within a company. Students learn in this course how to transform data into information through a database management system, how to query it interactively, how to visualize it in a meaningful way, how to share it on the Internet, and how to analyze it. The approach is practical, based on solving concrete problems the students are interested in, with hands-on labs and tutorials on a multimedia database management system.

Computer Networks and the Internet

The course TINST 312 has been approved by the faculty for Autumn 2005 with the following course description:

- Computational networking is fundamental to comprehend how computers and people communicate over the Internet. The course studies how the Internet and the World Wide Web have changed how people, businesses, and communities work and interact. It presents a variety of Web development technologies for developing state-of-the-art dynamic Web sites.

It follows a practical approach through hands-on labs and homework proposing to solve concrete Web development problems of interest to the student in a wide range of application areas.

Scheduling

We need to address the question of what courses will be taught which quarters. Of course this will depend on enrollment, for the short term I suggest the following plan.

For the next academic year try to run the minor as a cohort. That is, offer the three "depth" courses in sequence, Autumn, Winter, Spring. We would offer at least one breadth course in Winter and Spring the first year, and all three quarters in subsequent years. If enrollment permitted, we would offer the Fluency course a second time, in the Spring to allow better access to the breadth and other depth courses. We can probably get away with not offering any new breadth courses (unless we want to), if we re-offer both the HCI course and the social computing course, we identify courses in other programs that would qualify as breadth courses, and we remain open to the idea of sponsoring cross-program independent study courses.

TENTATIVE COURSE SCHEDULE			
	Autumn	Winter	Spring
Year 1	Fluency	Data Mgt. CSS Breadth	Networks CSS Breadth
Year 2	Fluency Breadth	Data Mgt CSS Breadth	Fluency Networks CSS Breadth

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Issues and Plans

The main issue we will need to confront prior to implementing this minor is anticipated enrollment: it is hard to anticipate how many students we would expect to see in these courses. Since we are proposing the minor in conjunction with a BA degree for which our students will be taking minors outside the program, in return we can expect other programs to promote our minor to their students. Initially we will want to enter into close relationships with likely partners (Business, GIS, Environmental Science), but our ultimate goal should be to transform the campus culture into one where cross-program enrollments are the norm rather an anomaly.

Revision History

Hanks – initial draft 1.0 of 11/11/2004)

Hanks – draft 1.1 of 11/16/2004

Hanks – version 1.2 of 11/29/2004

Reflects version approved by faculty

Hanks – version 1.3 of 12/02/2004

Cosmetic changes only

Hanks – version 1.4 of 1/24/2005

Updated, and eliminate some personal opinions and notes that were for internal consumption only. This version is intended for external distribution.

Hanks – version 1.5 of 2/12/2005

Replaced tentative course descriptions with the real ones, and changed course numbers

UNIVERSITY OF WASHINGTON, TACOMA
COMPUTING AND SOFTWARE SYSTEMS

Proposal for a BA Degree in Computing and Software Systems
(Version 1.5 – February 9, 2005)

Rationale

Although the BS curriculum provides a strong and widely accepted course of study for those who want to enter a traditional computer science career path as a software developer, there are other career paths our graduates commonly pursue, and thus we should explore the possibility of offering alternative educational experiences. The BA degree program proposed here offers solid grounding in the fundamentals of computer system, but does not pursue topics (systems and theory) in as much depth. To compensate, the student completes a minor in another academic area.

Review of the New BS Degree Core Curriculum

This is the core for the BS degree that will be put into effect beginning Autumn Quarter 2005.

Fundamentals
- 305 Practicum
- 342 Data Structures

Systems
- 371 Machine organization
- 372 Architecture
- 422 Operating Systems

Math / Theory
- 321 Discrete Math I
- 322 Discrete Math II
- 343 Algorithms

"Soft Skills"
- 360 Software Engineering
- 325 Ethics

In-Program Electives
- 25 Credits (at most 10 of internship / independent study)

Breadth Electives
- 15 Credits

Proposal

The proposal for the BA degree is:

1. Require the following 6 core courses (total of 30 credits in the core)
    a. TCSS305 – Programming Practicum
    b. TCSS342 – Data Structures
    c. TCSS371 – Machine Organization
    d. TCSS321 – Discrete Math I
    e. TCSS360 – Software Engineering and Design Methodologies
    f. TCSS325 – Social and Ethical Aspects of Computing
2. Reduce the number of in-program electives from 5 to 4 (leaving 20 credits in electives)
3. Require a minor from another program (generally 20 to 30 credits)
4. Remaining free electives are 10 to 20 credits depending on the minor.

SUMMARY	
Core courses	30 credits
In-program electives	20 credits
Minor	20 to 30 credits
Free electives	10 to 20 credits
Total	90 credits

Issues

1. Academic minors

It is crucial that students have enough interesting options for pursuing an academic minor, and that these options fit the 20 to 30 credit range noted above. Here is a list of academic minors currently being offered at UWT, and the number of credits they require

Asian studies	30	Recommended to Nursing, Social Work, and Education
Education	29	Recommended as transition to TCP program
Environmental Studies	25	Recommended to Urban Studies, Business, Nursing
Hispanic Studies	25	
Human Rights	25	Recommended to IAS, ES, Business, Nursing
Museum Studies	40-45	
Nonprofit Management	25	
Public History	35	
Urban Studies	30	
GIS (certificate)	24	

Notes:

- There are currently enough minors of the right "composition" on the books at UWT so we can launch the program and offer students enough options.
- We would want to encourage a few other minors, however:
  - a minor in Business Administration
  - minors related to the more "core IAS" concentrations like Arts Media, Culture, Psychology, Politics and Values
- There is every reason to believe that other programs will be receptive to defining new minors or adapt their minors to accommodate our students

2. Electives

Adopting the new program requires offering a satisfactory set of electives both to the BA students and to the BS students. Which raises the following questions:

- which current electives are suitable for students who have not completed the advanced "BS only" core classes
- are there any electives suitable for the BA population, but deemed "insufficiently deep" for students in the BS program

Offering the program with minimal additional resources requires that electives be shared between the two programs to the greatest extent possible. This policy seems feasible

given our current portfolio of electives, and is certainly consistent with other computer science programs that offer both degrees[1], and also with the UWT Environmental Science program, which offers both BS and BA degrees with a shared elective set.

Here is a proposal for electives, their prerequisites in the new core, and whether or not they would be available to BA students.

Course #	Course Name	Current prereq.	Proposed prereq.	Available to BA?
430	Networking	360, 422	360, 422	N (see notes)
432	Advances in OOD	360	360	Y
435	AI	360, 372	360	Y
437	Robotics	360, 422	360, 422	N
440	Formal Models	343	343	N
445	Database	343	343	N (see notes)
450	Graphics	360	360	Y
451	Digital Media	343, 360	360, 371	Y
455	Enterprise Apps	360	360	Y
460	Client/Server	360, 422	360, 330 or 430, 345 or 445	Y
465	Embedded Systems	360, 422	360, 422	N
470	Software Re-engineering	360, 422	360, 422	N
475	Entrepreneurship	343	360	Y
480	Programming Lang	343	342	Y
481	Security	422	360, 330 or 430	Y
443	Algorithms	343	343	N

Notes:

- Two courses of special concern are 430 and 445. These are of general interest to computer science students, and need to be part of the BA curriculum. On the other hand, we would like to teach a more rigorous version of the course to students in the BS program. The proposal is to introduce two new courses, 330 and 345 targeted to BA students and to CSS minors. The course descriptions are discussed in more detail in the proposal for the CSS minor. With these courses on the books, 430 and 445 can be taught (just) to the BS students. A course like Security that requires knowledge of networks would have either 330 or 430 as a prerequisite.

[1] Just as an informal example, the first three programs I found on the web that offered both degrees were UCSD, University of Miami, and Seattle Pacific. They vary greatly in size of program, but none of them had upper-division electives that were available only for the BS students. Seattle Pacific is a striking example: the main difference in core between their BS and BA programs is that BA students take one architecture class and BS students take a different (presumably more rigorous) one. But the prerequisite to all the computer science electives is *either* of the two courses.

- With the scheme in place, the BA students have at least 9 possible electives, which is adequate provided they are scheduled carefully.

Summary, Remaining Issues and Next Steps

So far the proposed degree has attracted wide support, both from within and outside of the program. It can be done with minimal additional resources. It broadens our reach to students, gives them a degree path that is compatible with the career goals of many, and (perhaps most important) it breaks down some boundaries between us and the other programs on campus.

One final issue is an administrative one: FTE counts. Since our BA students will be taking a significantly greater number of credits outside of the program we need to make very sure that this does not look like a net loss in enrollment for our program. Offering the BA degree along with a minor in computer science (leading non-CSS students to take our courses) should mitigate this problem.

Revision History

Initial Version 1.0 – Hanks, 11/11/2004
Version 1.1 – Hanks, 11/16/2004
    Minor revisions
Version 1.2 – Hanks 11/29/2004
    Reflects version approved by faculty
Version 1.3 – Hanks 12/2/04
    Cosmetic changes only
Version 1.4 – Hanks 1/24/05
    Update, and get rid of speculative wording and personal opinion.
    This version intended for external distribution.
Version 1.5 – Hanks 2/9/05
    Change section in proposal to list the courses that are required for the BA, rather than those that are excluded from the BS core. Makes the degree requirements easier to comprehend in the document.