Engineering Articulation Meeting, Thursday May 6 2010

Boardroom C408, Langara College, 100 W 49th Ave, Vancouver

Agenda

8:30 – 9:30 Gathering; coffee & carbohydrates

9:30 Introductions

Welcome, by Dr. Martin Gerson, VP Academic and Provost

9:45 Meeting:

- Changes/Adoption of Agenda
  - Topics for general discussion for afternoon
- Approval of minutes of the 2009 meeting (can be seen at the BCCAT website http://www.bccat.ca/articulation/committee.cfm. Select Engineering from the pull-down list of committees, and Go)
  - Business arising
- Election of a new Chair
- Date & place of the 2011 meeting (UBCO offer) and 2012 (UFV?)
- APEGBC report
- Administration Liaison report
- Institutional Reports

(with a break at about 10:45)

12:00 Lunch

1:00 Resume – finish reports

Round Table discussions

- Request for the destination Universities to put a link on their faculty web pages for transferring students, to include a statement to the effect that most of the colleges in the province have some form of transferring package which includes all or most of the first year courses. Sending institutions should provide matching information on their websites.
- That Eng Chem course again…
- UBC Mech Eng – transfer in with some 2nd year Math?
- Unofficial dinner meeting for those staying over?

~ 3:30 Adjourn

Attendance

Meeting Chair : Tom McMath

Meeting co-chair: Peter Mulhern

BCAT rep: Brian Carr (brian.carr@kwantlen.ca)

School Reps

Bruce Dunwoody – UBC (V & O) (bruce.dunwoody@ubc.ca)

Tom McMath– Kwantlen (Tom.McMath@kwantlen.ca)

Arnold Sikkama - Trinity Western (Arnold.Sikkema@twu.ca)

Denis Lightford - NIC (dlightfoot@nic.bc.ca)

Richard Christie – Okanagan College (RChristie@Okanagan.bc.ca)

Barbara Rudecki– College of New Caledonia (rudecki@cnc.bc.ca)

Ben Giudici – Thompson Rivers University (giudici@tru.ca)

Steve Helle – UNBC (helle@unbc.ca)

Jim Bailey – College of the Rockies (bailey@cotr.bc.ca)

Kuros Gadareh – Douglas College (gadarehk@douglas.bc.ca)

Chris Niwinski – BCIT (came after lunch) (Chris_Niwinski@bcit.ca)

Rich Chambers – SFU (rich_chambers@sfu.ca)

Derek Wakefield– Camosun (wakefield@camousen.bc.ca)

Margaret Dulat – Capilano (mdulat@capilanou.ca)

Todd Stuckless – Langara (JohnTodd@Langara.bc.ca)

Peter Mulhern – UFV (Peter.Mulhern@ufv.ca)

Paris Polydorou – VIU (paris.Polydorou@viu.ca)

Guest

Paul Knipe– A high school teacher affiliated with College of the Rockies (paul.knipe@sd5.bc.ca)

Minutes (as noted by Todd Stuckless and later glossed by Peter Mulhern)

Tom McMath brought the meeting to order at 9:30.

Welcome

Martin Gerson, Provost of Langara College welcomed the attendees and then briefly described Langara's academic program and mission statement. He spoke of the importance of articulation, and his own role as a BCAT council member. He also mentioned in passing the issue of gender balance in Engineering.

Agenda and Minutes

Tom McMath introduced the agenda. Margaret asked that the Round Table discussion touch on the issue of receiving schools providing more definite instruction to sending schools, regarding the receiving schools requirements for acceptance of transferring students. Tom then forwarded an approval of the 2009 minutes, which was seconded by Bruce and carried unanimously.

Report on CEAB Rules and the Transfer Process

Bruce Dunwoody addressed the CEAB limit on the amount of program that can be taught by non-engineering faculty and the implications for transfer.

The CEAB divides the curriculum into five sections (Mathematics, Natural Science, Engineering Science and Computer Science, Engineering Design, and Complementary studies). THE CEAB expects that at least two thirds of the Engineering Science and Engineering Design be taught by Professional Engineers. If there is a possibility that a course in a program may not be taught by a P.Eng, then it can not be counted towards the required numbers; in other words, the accreditation requires a 100% guarantee that certain courses have a P.Eng. as an instructor, and this places a major restriction on the number and types of courses that can be transferred.

The advisory is for a 900 academic unit limit, where a typical 3 credit course represents 37.5 a.u. (One lecture hour or two lab hours is 1 a.u, and a 12.5 week term is assumed.) It followed in discussion that this easily allows for the entire 1st year curriculum to be taught by non-engineers, but that having much 2nd year could restrict the students ability to select credits in 3rd and 4th year courses. Bruce also noted that any sending institution's 2nd year "bridging" program, as developed in conjunction with UBC, is not at issue as the bridging program is reviewed as part of the accreditation process. Derek says that CEAB visited the Camosun bridging program as a part of the UVic accreditation, and also that most of the faculty involved at Camosun are, or will be, PEngs. Bruce notes that 2/3 of all the "engineering" units that a student accumulates as an undergraduate must be taught by PEng's, and this accumulation includes the two 1st year computer science courses. Further to this, Bruce states that of the (typically) 120 total credits a student earns, 60% must be obtained at UBC. But he points out that the UBC Registrars office is able to provide clarification on transfer issues on a case-by-case basis where necessary.

On a related issue, there is some ambiguity on how many credits can be transferred. There is a general assumption that this is 60 credits because most degrees are 120 credits. Engineering degrees are about 150 credits, so perhaps 75 transfer credits are appropriate.

Support for Transferring Institutions

There was a request for an action item regarding letters of support from UBC to colleges which are having trouble maintaining an engineering transfer program in the face of dwindling enrolment and/or budget cuts.

APEG website

There was a discussion of prompting APEG to keep their website up to date.

Chair and Co-Chair

Tom McMath announced he is retiring this year, and will step down as chair. Peter Mulhern offered to step up, and Barbra offered to act as his co-chair. This was accepted unanimously.

Future Meeting Sites

UBC-Okanagan has offered to act as host for next year's meeting (2011). Peter has offered University of the Fraser Valley for consideration for 2012. Further discussion of the 2012 meeting place was deferred, depending on consultation with the Physics Articulation Committee. Jim asks for confirmation of the 2012 meeting date, it then stands as Thursday May 5th, 2012.

Paris raised concern over travel costs to reach more distant meeting locations. Brian voiced support from BCAT in persuading individual colleges to provide the necessary funding to its articulation committee members. There was also some discussion of new teleconferencing style technologies. In particular each institution was asked to look into the possibility of using Skype or a similar package, but if anyone has the intention of using it that they should give the chair adequate warning.

APEG Report

The next agenda item was a report from APEGBC. However no APEG representative was present.

Administration Liason Report

Brian Carr hosted a round table discussion of the changing environment for BCAT with the new Universities. There was recognition of the challenges faced as all the Universities compete to either retain their own freshman intake or to attract students from other institutes. There was a general consensus in recognizing the continued importance and value of the transfer credit system. In particular, transfer now works "both ways".

Ben enquired as to procedures for course articulation. Brian clarified that the sending institution should consult with the receiving institution, and that it is then the receiving institution which consults with BCAT.

Brian announced that he is retiring this year, and has asked BCAT to appoint his replacement.

Engineering Articulation Report Camosun College

Camosun College offers three (3) technology-access programs, four (4) technology programs, and seven (7) engineering-bridge programs. There are also a number of technician programs.

Technology Access Programs

The technology access programs assist students in meeting the admission requirements for the technology programs. Camosun presently offers access programs to Civil, Electronics and Mechanical Engineering Technologies.

Table 1. May Applications for the Technology Access Programs

Discipline	Seats	2010	2009	2008	2007	2006	2005
Civil	20	36	25	24	22	20	26
Electronics	15	23	8	3	6	11	23
Mechanical	16	27	12	11	16	13	26

The technology access programs are normally taken by mature students returning for retraining or recent high-school graduates who do not meet the admission requirements. They combine lower level technology courses with academic upgrading. Recently, there has been a slight rise in interest for all the Access programs.

Technology Programs

Camosun offers civil, computer systems, electronics and mechanical engineering technologies. The electronics engineering also has a computer engineering option. All technologies offer co-op as an option.

Table 2. May Applications for First-Year Technology Programs

Discipline	Seats	2010	2009	2008	2007	2006	2005
Civil	60	73	59	73	84	52	53
Computer Systems	60	74	60	42	68	59	53
Electronics	44	56	60	38	28	28	51
Mechanical	60	71	72	64	59	63	79

Due to low interest in the Computer Engineering Technology program, an option based on the Electronics Technology program, the Computer Engineering Technology program has been suspended. If interest increases, it may be offered again. Interest has increased in all the other Technology programs.

Engineering Bridge Programs

The Engineering Bridge Programs offered by Camosun College are: Civil, Software, Mining, Electrical, Computer, and Mechanical Engineering and recently the Computer Science Bridge.

The Computer Science Bridge which will allow graduates of a Computer Systems Technology or similar program to enter the 3rd year of Computer Science at the University of Victoria (UVic).

The Civil and Mining Engineering Bridge programs feed into the **3rd** year at UBC Vancouver and UBC Okanagan.

The Computer and Electrical Engineering Bridge programs allow students to enter the **3rd** year at UVic. The revised Software Engineering Bridge allows students to enter the **2nd** term of the year at the University of Victoria.

The Mechanical Engineering Bridge bridges into the 3 year of UVic, UBC Vancouver and UBC Okanagan. However, there is a possibility that there will be two different Mechanical Engineering Bridge programs, one to UVic and the other to UBC.

Table 3. Students in the Engineering Bridge Programs

Discipline	**2010 Seats**	**2010**	**2009**	**2008**	**2007**	**2006**	**2005**
Civil	40	39	25	26	28	18	N/A
Mining	10	1	1	1	0	1	N/A
Computer	10*	4	7	11	7	6	8
Electrical	30*	34	31	31	30	34	30
Mechanical	45	37	38	40	63	31	27
Software	10	3	6	1	3	4	7

* *UVic will accept a total of 40 Computer and Electrical Engineering Bridge students.*

In summary:

- The interest in the Civil Engineering Bridge is strong.
- There is only a little interest in Mining and Software Engineering.
- Interest in Computer Engineering is low. However, university demand for students entering 3rd year is high.
- Interest in Electrical Engineering is steady.
- Interest in Mechanical Engineering is good. However, there are many unfilled seats available at UBC Okanagan and Vancouver campuses.

Conclusion

Enrolment is high in both the Engineering Technology and Engineering Bridge programs. Many students come from outside of Victoria to take the Engineering Technology programs to better prepare them for the Engineering Bridge programs.

Derek Wakefield, P.Eng
Coordinator, Engineering Bridge Programs
Camosun College

Capilano University Report:

Capilano University has two engineering transfer programs, both of which transfer to second year engineering at UBC and fulfill most or all of the prerequisites for second year engineering at other B.C. universities.

First-Year Engineering Transfer Program

This program is modeled after first year engineering at UBC and is geared towards strong high school graduates. Statistics for the 2009/2010 year are as follows:

- 205 applications were received
- 85 admission offers were made
- 33 students registered
- 16 students completed the program in 1 year
- 16 students have completed with GPAs that meet UBCs transfer criteria

This year, so far we have received 179 applications for the 2010/2011 year.

Engineering Transition Program

This is a two-year program for mature students who have been out of school for a number of years and for high-school students who do not have the prerequisites to begin first year engineering. The cohort that are finishing this year began in the fall of 2008. Statistics for this group are as follows:

- 113 applications were received
- 39 admission offers were made, plus an additional 37 offers to applicants of the First-Year program
- 29 students registered
- 11 students completed the program in 2 years
- 9 students have completed with GPAs that meet UBC's transfer criteria

The cohort that began in the Fall of 2009 are finishing their first year of the program. Statistics for this group are as follows:

- 95 applications were received
- 58 admission offers were made, plus an additional 29 offers to applicants of the First-Year program
- 34 students registered
- 24 students are expected to return for a second year

This year, so far we have received 82 applications for the 2010/2011 year.

Other News

- Our enrolment capacity remains capped at 40 for this year. Last year this ended up not being a problem since we got less students accepting our offers, and therefore did not have to turn away any qualified students.
- We are working on providing information to ESL students on the ability for them to take ESL courses concurrently with engineering courses. This has always been possible, but students were not aware of it in the past.
- Starting this year, we are no longer offering APSC 160 (Engineering Design), as it has been replaced with APSC 130 (Technical Drafting and Computer-Aided Design) – lab course, and APSC 140 (Engineering Design) – lecture / project course. These two courses together cover the same material as APSC 160, but are now split over two terms. This way, students will be proficient with drafting before starting their project course, and will also have their workload more balanced across the two terms. SFU has articulated APSC 140 with ENSC 1XX. We are hoping to complete articulation with other institutions. Articulation with UBC by the end of this summer is crucial, as students starting the program this year need to be certain that the courses will transfer appropriately.
- This year we used AutoCAD 3D instead of SolidEdge for 3D drafting, as we were able to purchase a license for a reasonable rate. The software is very slow, and we hope to upgrade the hardware in the labs this summer.

Margaret Dulat, Convenor of Engineering

College of the Rockies

(College of the Rockies did not provide a written report – this is a summary of the verbal comments.)

They had 8-10 students this year.

This was the first year they had transfers to UVic.

They want to expand their offerings by offering drafting through the local high school.

They are hoping to partner with Selkirk College and offer the engineering courses over a video link but offer tutorial support on-site.

College of New Caledonia

First Year Engineering Transfer Program

CNC continues to offer first year Engineering Transfer Program. This year the enrollment both in Applied Science and Physics courses was near at the same level as last year.

- APSC 100 (Introduction to Engineering) – 23 students
- APSC 120 (Engineering Drawing with AutoCAD) – 25 students
- Physics 101 (Introductory Physics I) – 35 students
- Physics 102 (Introductory Physics II) – 20 students
- Physics 105 (General Physics I) - 25 students
- Physics 106 (General Physics II) - 14 students
- Physics 204 (Mechanics I - Statics) – 12 students

Medical Laboratory Technologist Program – First Graduates

15 CNC students enrolled in the college's first-ever medical laboratory technologist program graduated this spring. The MLTS program's current class features 23 students and the third class just began in January with 24 students.

New Medical Radiography Program - Opening in a Fall 2011

There is a severe shortage of radiography technologists in northern B.C., across the province and nationally. A new Medical Radiography Diploma Program will be opened at CNC in a fall of 2011. We already have more than 230 people on an interest list for 16 seats. CNC's program will be based on the BCIT model, which is currently being revised.

Civil Engineering Technology Initiative

The purpose of this initiative is to increase the number of engineering technologists and degree graduates serving the north. The thorough labor market research was completed by the Applied Technical Education & Engineering Consortium (ATEEC) in spring 2009. Civil and Mechanical Engineering are two of the areas identified in the ATEEC study as having the highest demand in this region. In response to industry needs, CNC and UNBC plan to offer appropriate engineering certificate, diploma and degree programs.

Barbara Rudecki, P.Eng. Applied Science/Physics Instructor

Douglas College 2010

Enrollments in the Engineering Transfer courses have increased significantly, specifically the number of students registered in the APSC 1110 - Engineering Graphics with AutoCAD this fall was 39, with 22 students completing the course successfully. Previous year's enrolment was 18. The CAD part of the course is continuing to be popular among the students. A full AutoCAD software suite will be used for the Fall 2010 semester.

Enrollments in the Physics 1170 - Engineering Mechanics this winter was 30 with 21 students completing this course successfully. As with previous years, the Physics Department invited a guest speaker from industry. This year, our speaker was the Technical Director at SNC -Lavalin in Vancouver, who spoke about the opportunities and challenges involved in undertaking a large public private partnership project such as the Canada Line construction.

Students completed a group project based on this presentation.

There is a plan for a Douglas/SFU partnership.

Kuros Gadareh *CEng MIMechE*

Physics Department, Douglas College

Kwantlen Polytechnic University 2010 Engineering Articulation Report

Our program was completely full at both campuses this year. Also, we had very few dropouts. We had a higher than usual number of students who had studied elsewhere or been out for a year or two, and this improved the maturity level of the classes, particularly in first semester. There was some problem with students registering at the last minute but not nearly as much as last year.

The one-semester Intro to Engineering (APSC 1124) continues to work well. We were able to schedule seminars in all weeks, making use of our in-house metaskills seminars where we couldn't get an external speaker or a field trip. The sessions on working effectively in groups and on making presentations resulted in good final presentations on a design project (in APSC 1124) and the robot project (in APSC 1299, in second semester). The only problem with this is that the assignments tend to pile up at the end of the semester when everything else is getting busy.

We have completed a formal transfer agreement with UVic. An unforeseen glitch here is our second Comp Sci course, which is only offered at Surrey campus; while the time was not in conflict with any of the Richmond courses, there was no time allowance to travel between campuses, and the time slots were back to back. We'll try to revisit the scheduling this year, but it will be complicated by the fact that our business, arts, and humanities have switched to a "pilot project" 1x3 hr/wk grid (or 2x1 ½) rather than our old 2x2 hrs/wk, so our grids are somewhat incompatible – and our computer science department is lodged in the Business group.

We have also worked a memorandum of agreement internally with our Drafting programs, by which our students can take a summer semester drafting program on top of completion of first year and receive the first level drafting certification (could be useful for co-op placements?); their students who want to enter our program can get some prerequisite waivers plus of course the Eng Graphics course credits.

The APEGBC Richmond Branch helped with the Kwantlen Science Challenge for high school students again last Fall. At Surrey campus, we worked with the Fraser Valley Branch to organize popsicle bridge contest for high school students, but this effort was not successful -- we'll reanalyze and try again next year.

In keeping with our University status, Kwantlen has the definite intention of developing and supporting our own degree programs. This gives opportunity for growth in all areas, but leaves the status of transfer programs such as Engineering unclear. We live in interesting times.

Tom McMath, Physics/Engineering Instuctor
Kwantlen Polytechnic University

Langara College Vancouver, BC

Overall, Langara college has seen increasing enrollments for over a year now.

The demand for engineering continues to be stable. The best measure of the number of engineering transfer students we have is the enrollment in Engineering Mechanics (UBC PHYS 170 equivalent). We had 22 students in Engineering Mechanics in Fall 2009. This spring we had 29 students. As usual, we are running all the courses required for first-year engineering this summer as full-semester courses (May—Aug). The Summer section of Engineering Mechanics more than 2/3 full with 22 students.

This was the second year that we ran the Engineering Mechanics in the fall. The result is that we still have a nearly full course in all three semesters with no waiting lists.

Todd Stuckless is the incoming Engineering Transfer Co-ordinator.

Respectfully submitted,
Bradley Hughes

North Island College

North Island College delivered two new courses this year which targeted students transferring into engineering: Linear Algebra and Mechanics I (statics). Enrollment for linear algebra was twelve, at three campuses (ITV classrooms were used to connect the campuses with one instructor), and enrollment for Mechanics was 7 at two campuses.

With some encouragement and guidance from faculty and administration at UVic, we have been developing an Engineering Design course which would transfer to UVic for their two new first-year Design and Communications courses. The new course will be project based, with two major term projects in addition to smaller design exercises to be completed by teams of students. It is our intention to offer this course in May/June of 2011 to complete a seamless transfer from NIC into UVic term 2A for the following fall term.

Our first-year engineering transfer program will be as follows:

Fall Term

Course	Description
CHE 110	Chemical Principles I
CPS 100	Computer Programming I
ENG 115	Essay Writing
MAT 133	Linear Algebra
MAT 181	Calculus I
PHY 120	Principles of Physics I

Winter Term

Course	Description
CHE 111	Chemical Principles II
CPS 101	Computer Programming II
ENG 160	Effective organizational writing
MAT 182	Calculus II
PHY 121	Principles of Physics II
PHY 141	Mechanics I (Statics)

Spring Term (May / June)

Course	Description
ENR 110	Introduction to Engineering Design

The program has been designed to give seamless transfer into UVic, but most of the content should be transferable to other engineering schools.

Okanagan College – May 6, 2010 Articulation Report

Okanagan College has five technology programs (Civil Engineering Technology, Electronics Engineering Technology, Mechanical Engineering Technology, Network Engineering Technology, Water Quality Technology) and one computer technology program (Computer Information Systems with both a Diploma and a Degree). Enrolment is strong in Civil with a substantial waitlist. Each of the others they are not full with ELEN and NTEN a bit weak. Applications for the Technology programs are up and down this year depending on the program (+14% in CIEN, -18% in ELEN, +4% in MECH, -14% in NTEN, -29% in WQT, and -26% in CIS). Last year first-year students numbered 40 in CIEN, 21 in ELEN, 28 in MECH, 21 in NTEN, 33 in WQT, and about 30 in CIS/BCIS. Second-year numbers were 11 in MECH, 11 in ELEN, 14 in WQT, 38 in CIEN, 14 in NTEN, and 20 in CIS/BCIS. We had ~9 students in third-year and ~7 students in fourth-year of the BCIS program. Based upon applications we expect CIEN to be full at 40 again. ELEN will likely have 17-18, MECH will likely have ~28, NTEN will likely have 18-20, and WQT will likely have 22-24,. The CIS/BCIS can handle more than 40 students but is expected to have about 22-24.

Okanagan College does not have an Engineering transfer program any longer (since 1992). Therefore, our Engineering-bound students just take a slightly modified first-year science program and as a result are very hard to track. I believe we had 2 Engineering-bound students at our Penticton campus, 5-6 at the Vernon campus, 3 students at our Salmon Arm campus and about 8-10 at Kelowna. We offered PHYS 202 (Engineering Statics and Dynamics) for the second time this winter semester at Kelowna for the Engineering students.

Our numbers overall are close to static this year in Science at Okanagan College (-2%). Applications for next year are up (+21%).

The numbers in Physics at Kelowna this year were down for both streams (-23% calculus-based and -26% algebra-based). Our Physics numbers in Penticton were up nicely (+54% algebra-based), static in Salmon Arm (0% algebra-based) and up in Vernon (+40% for calculus-based and +8% algebra-based). Attrition in first-year physics was not a major problem this year. Most of the attrition still occurs in the first semester.

This year saw our fourth year for offering second-year courses at Okanagan College. We planned to offer the Modern Physics (OC PHYS 200), second-year Classical Mechanics (OC PHYS 228), Statics and Dynamics (OC PHYS 202), plus our two second-year labs (OC PHYS 219/229). Due to very low enrolments we had to cancel three of the five second-year courses (PHYS 228, 219, and 229). The remaining two courses had low enrolments (2 and 4 students each respectively). I do not know how long we will be able to hang onto the second-year courses with those enrolments. I suspect one more year yet again or until we have a retirement. We will offer the same courses next year plus one of the second-year interdisciplinary courses for Arts and Science (History of Cosmology). I expect to see a shift away from the regular second-year Physics courses to second-year interdisciplinary service courses to other sciences in order to keep some second-year presence in Physics (e.g., We have four interdisciplinary second-year courses. They are Environmental and Energy Physics, Biophysics, Geophysics, and History of Cosmology.).

Richard Christie, Physics and Astronomy

Okanagan College.

School of Engineering Science Simon Fraser University

The engineering program at SFU is a medium sized specialized program with approximately 1100 undergraduate students and 250 graduate and PhD students (attending both our Burnaby and Surrey campuses/programs). Each year we admit, on average, 40-50 college and university transfer students into our program. There is no limit on this number. We are currently accepting all qualified applicants.

Admission requirements – College/University Transfer

Students wishing to transfer into our program from a college or university must first be admitted to the university (a minimum of 24 credit hours of transferable courses is required) at which point SFU Engineering Science will review each applicant on an individual basis for admission to our program. The student must obtain a 2.5 CGPA or higher and have been enrolled in at least a 12 credit course load in the semester prior to entry into our program. Applicants with less than 12 credits are reviewed by the Admissions Chair, Dr. Ash Parameswaran on a case-by-case basis. Approximately 250 students (High School & College/University transfer) were admitted to SFU Engineering for Fall 2009.

Burnaby Program

We definitely welcome all transfer students but there are still some challenges in regards to students making a smooth transition, as many 1st and 2nd year engineering science specific courses at SFU are not offered at other post secondary institutions. We actively promote transfer credit accessibility for incoming transfer students by highlighting the fact that SFU has a flexible curriculum in that a student is eligible to take any course in the program as long as they have the pre-requisite for the course. Ultimately, this means that transfer students do not have to finish all the courses for any given year before moving onto courses in another year.

The SFU Engineering Science Undergraduate Curriculum Committee (UCC) is further examining ways to make the Burnaby engineering program more “transfer friendly.”

Five options are available at the Burnaby campus.

Waivers granted for BCIT work: Currently, a student with a BCIT diploma with a 65% final average or higher will be admitted to any program at SFU.

Block credit consisting of approximately 32 engineering applicable credits is awarded for these BCIT diplomas:

-Automation and Instrumentation Tech (Electrical)

-Electrical Power Tech (Electrical)

For all other BCIT diplomas and certificates, specific course credit is awarded on a case by case basis.

Recent BCIT course waiver agreements:

BCIT's ROBT 3341 PHYS 1164 = SFU's ENSC 230

BCIT's CHSC 1103 & 2203 = SFU's ENSC 330

BCIT's COMM 1135 & 2235 = SFU's ENSC 102

Mechatronic Systems Engineering (MSE) – SFU Surrey

We have now had three intakes for the mechatronics program. In 2007 we welcomed in 70 students, 2008 we welcomed 92, and in 2009 we added another 93. We are currently on pace to accept another 90 students for Fall 2010.

MSE has been very popular with transfer students. In 2007 we had 17 college and university transfer students. In 2008 we had 21 transfer students. In 2009 we had 24 transfer students.

MSE has established a course waiver policy that is done on a case-by-case basis. Students can bring forth any course that they did not receive transfer credit for and the Mechatronics faculty will review it and grant waivers if applicable. (Our Burnaby engineering program is now beginning to adopt this same procedure.)

A transfer agreement has been arranged between Mechatronics and Kwantlen University Cloverdale. It allows Mechatronic students to do a full summer semester of autocad courses at Kwantlen to achieve a certificate. In return, it allows Kwantlen graduates of the Autocad program to receive credit for some ENSC/Mechatronic courses if they choose to move onto the Mechatronics program in Surrey.

Initial discussions have taken place with University of the Fraser Valley regarding potential transfer arrangements

A double degree program consisting of Mechatronics Engineering and Business Administration has been developed and approved by both the Business and Mechatronics schools. We are currently awaiting final university senate approval for this program to become official

A new Systems One first year direct entry program has been developed to replace the TechOne cohort program. Applications are up; International applications have gone from a couple to about 50.

Faculty of Applied Sciences Restructuring

As a result of an initiative that officially began in November of 2006, the University has now restructured all of its faculties. The Faculty of Applied Sciences now consists of two schools, Engineering Science and Computing Science. We have a new Dean, Dr. Nimal Rajapakse the former Dean of the Mechanical Engineering Department at UBC, who started with us in

September 2009. And Dr. Rob Cameron from our Computing Science department has just recently joined us as the Associate Dean.

We are just about to complete our first full academic year as the new Faculty of Applied Sciences. The most exciting change has been the creation of the new Systems One cohort program at our Surrey campus. This program has Mechatronics sharing common first year classes with the Software Systems Computing Science program at Surrey, ultimately allowing students to sample out both Mechatronics and Software Systems classes in their first year of university study.

Our Program

As of April 2010, our six program options are:

Computer Engineering

Electronics Engineering

Mechatronic Systems Engineering

Systems Engineering

Biomedical Engineering (honours only)

Engineering Physics (honours only)

The first four options listed above are Majors programs; graduation from these programs requires a minimum GPA of 2.0, completion of a Capstone Project, and a minimum of 3 co-op terms. All six options are also available as Honours. Graduation with Honours requires a minimum 3.0 CGPA and completion of an Undergraduate Thesis. Biomedical Engineering and Engineering Physics are Honours only options.

The Engineering Science program at SFU underwent a formal CEAB accreditation review in Summer of 2009, and accreditation has been further granted until June 2013.

Engineering Science and Faculty of Applied Science Contacts:

Dr. Rob Cameron, cameron@sfu.ca Associate Dean, Faculty of Applied Science

Dr. Ash Parameswaran param@sfu.ca Professor and Chair of Admissions

Michael Sjoerdsma msjoerds@sfu.ca Lecturer (Engineering Communications) & Faculty Advisor

Paula Scott ptr@sfu.ca Internship/Recruitment Program Manager (Co-op)

Rich Chambers, rich_chambers@sfu.ca 778 782-7090 Recruiter/Advisor (transfer credit and admissions advising)

TRU Engineering Transfer Program Report May 6, 2010

Engineering Articulation

May 6, 2010 – Langara College

2009/2010 Engineering Program Summary

The TRU first year engineering program has capacity for 40 students. In fall 2009, 40 students entered the program. Five of these had previously completed a full year of science studies or portions of the first year engineering program. Three of the students entering were females. Two opted for ½ time studies in order to accommodate other personal commitments.

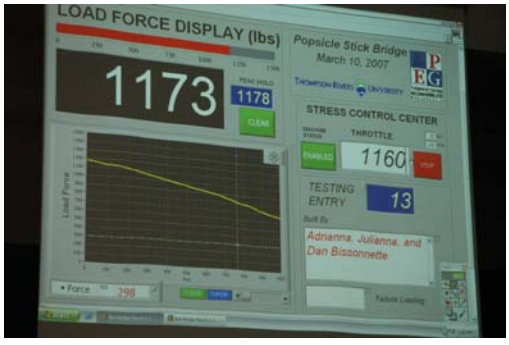
At the end of winter 2009, approximately 29 of our students should be in a position to move into second year elsewhere. The majority of these are intending to transfer to UBC. However this year has seen a renewed interest in transfer to UVic and at least 5 students will have applied to do so.

2010/2011 Engineering Program Projections

Applications for the first year engineering program are up significantly over last year. As of this writing, 44 students had been admitted to first year with an additional 16 incomplete applications on hold. Seven (more than ever before) female students have been admitted this year. Only two of our admitted students transferred in from a science program.

B. (Ben) C. Giudici

TRU Engineering Transfer Program Coordinator



Trinity Western University 2010

We continue promote three options for our pre-engineering and engineering transfer programs:

- Take a pre-engineering year of some science courses (calculus, physics, chemistry) plus English and humanities electives and apply into another university's engineering program.
- Prepare for admission into UBC's second year by spending one year at TWU. This program adds linear algebra, computer programming, physical chemistry, statics & dynamics (at UFV or Langara), and engineering graphics at Kwantlen.
- Prepare for admission into UBC's second year by spending two years at TWU. This adds multivariable calculus, differential equations, mechanics, economics (macro & micro), statistics, technology & society, some or all of which will help reduce the student's workload once arriving at UBC, and allows opportunity for more liberal arts courses.

Our information is posted at www.twu.ca/academics/science/engineering .

Changes: We had listed two differential equations courses, Math 321 & 322. These two 3-credit courses have be collapsed into one 4-credit course now, Math 321, effective Fall 2010. We are now also recommending Chem 240 (Physical Chemistry, mostly thermodynamics, a third course in Chemistry).

Over the course of the year, we had about 16 students express an interest in engineering transfer. By the end of the year:

- Three or four plan to go to UBC in 2010 after two years at TWU.
- Three or two want to go to UBC in 2010 after just one year at TWU. They might end up spending another year.
- Two failed most math and science courses.
- Three or four plan to stay for another year.
- Five had changed their plans: physics, chemistry, business, political studies, computing science.

Two of our students took engineering graphics at Kwantlen (May/June 2009) and UFV (Spring 2010); thanks to Tom McMath and Peter Mulhern for allowing this to work out.

We had a pizza/speaker event for interested students. It proved quite a challenge to get about 2/3 of those "interested" to show up.

Dr. Arnold E. Sikkema, Associate Professor of Physics and Engineering Transfer Program Coordinator

Trinity Western University

University of the Fraser Valley - 2010

The News

UFV has started a major push into attracting International students. The goal was primarily to fill spaces in upper level science courses and Business courses, but it appears to have sparked a major interest in Engineering Transfer as well. I have been asked to look into ways of arranging a five semester schedule that will do all the Engineering courses plus a host of English Language and communications courses.

UFV's administration has adopted a policy to stop over-producing FTEs. We are now under a freeze on the number of sections we can offer, and any expansion can only occur at the expense of another program. (Sections funded by International Education are exempt from this restriction.) There are possible growth opportunities that will probably be missed because of this policy. Physics/Engineering is now under a Program review as well.

UFV has begun discussions with SFU to discuss the possibility of transfer into their Mechatronics program in Surrey. This has been on hold for a few months due to a shortage of my time to do the follow-up discussions.

We have also adopted an internal measure that students who apply to Engineering Transfer but who are not admitted will be admitted to the B.Sc. instead. This will give the students a higher registration priority, but is really an attempt to hold on to a few for our B.Sc. Program.

We offered two sections of the drafting course for the last two years. The wait lists from the Fall do not continue into the Winter, so if space (and my time) permit I am trying to move the second section into the Fall term.

Course Specifics

Our Engr 151 Drafting continues to use Intellicad software and Earle as a suggested text.

Our Engr 113 Statics and Dynamics continues to use Hibbeler.

Enrollment Specifics

We continue to be restricted to 24 students in our one year program, but a majority are now choosing to do the courses over two years. We had almost 80 applicants for 2009/2010, and about half a dozen fewer in 2010/2011.There were 51 students interested in Engineering enrolled in the first week of September, yet only 32 were in the Statics and Dynamics course in the winter. There was notable attrition in the first semester as very few seemed willing to keep to the thirteen course load to complete in one year.

Of the twenty-six that responded to a poll, 13 applied to UBC and 9 will take it as their first choice, at least two have applied to and will attend UVic as their first choice. One is planning on Ontario. (Yes, the numbers do not add up). An additional dozen have said they will stay at UFV for another year.

Peter Mulhern

Vancouver Island University 2010

In March 2010 we learned that the second year engineering transfer programme was to be suspended, which effectively means that our second year programme is cancelled. At that time we had received applications from fourteen students, seven of whom had not applied elsewhere. In the previous year, seven students applied to our second year but only one attended. This was unusual as we had three or four students in the previous two years.

Our first year engineering transfer student numbers were strong this year, with approximately 50 students entering the first year Engineering transfer programme, 38 of whom were in the UVic stream. This was a significant increase over the previous year when the numbers were 30 and 15, respectively. We estimate that 30 students will have high enough GPA to transfer into second year engineering with 20 going to UVic and 10 to UBC.

The "Engineering Fair," a full-day event with information about engineering and a siege engine building competition for Grade 11 physics students, has entered its third year and it continues to attract classes from schools in the Duncan-Nanaimo-Qualicum area. This year we hosted approximately 200 students.

Finally, eight first year engineering students registered in our optional Co-Op programme. While in the summer of 2008 all eight students were employed we did not have the same success in 2009 with only one student out of eight registered being placed. We hope that the placement success rate will improve this year.

Paris Polydorou Dept. of Physics, Engineering and Astronomy

British Columbia Institute of Technology

(BCIT did not submit a written report – this is a summary of the verbal comments.)

Civil Engineering is still seeking accreditation. Their Mech program was visited by CEAB this year, and next year it will be electrical.

Currently there is no transfer from other technical programs in part because of the different entrance requirements.

University of British Columbia

(UBC did not submit a written report – this is a summary of the verbal comments.)

UBC-O was accredited this year. The visit went well. The results will be announced in June.

UBC-V may have an over-enrollment in second year. The guaranteed transfer agreements are still in place, but are being interpreted strictly. The competitive entry GPA will be 3.0 this coming year. (But it will probably drop back down the following year.)

There are 620 students in first year (there were 650 last year). This is about 75 above the quota. There are also 100 international students.

The ECCT (Engineering Communication Competency Test) will be an option for entry to ApSc 201, the technical writing course.

UBC is moving away from AutoCAD in favour of SolidWorks. The DWG editor in SolidWorks is a lot like AutoCAD.

University of Victoria

(The University of Victoria did not submit a report – the following was related on their behalf.)

UVic is revamping its full first year. Software Engineering will not require chemistry. Only one computer course will be required for all programs except computer engineering. UVic is also planning to move technical writing into first year.

Round Table Discussions

Request for Destination Universities to put a link on their web pages

The destinations universities were requested to make available the information that most of the post-secondary institutions had some form of transfer package.

The sending institutions were asked to provide information on the transfers on their web sites.

Some agreements are not fully described by the BCCAT, and in these cases the sending institutions were asked to include a phase such as, "Students should contact the receiving institution for details and verify the transfer."

Chemistry Course for Engineers

The issue of the UBC 1st year course in Engineering Chemistry arose. There was concern regarding consistency in UBC's description of the curriculum. Todd Stuckless spoke to this, as he had taught the course at UBC. He described the curriculum as incorporating large sections of each term of the two-term requirement which it had supplanted, and which he had previously taught. He stumbled badly on the new curriculum, and after two attempts retrenched to a course outline which abridged the material. However UBC remained consistent in their vision of the course, and after his unsuccessful appointment they brought in different instructors, and reposted the comprehensive course outline. In round table discussion there was some recognition of the challenges the course presents to instructor and student. Without need of mention, UBC would have put considerable ongoing effort into a careful parsing of the material, and the development of innovative means of accelerated delivery. There was a consensus to revisit the topic at a later date, as the course further develops.

Also raised during the discussion was the difference between the way chemists and physicists approach the topic of thermodynamics.

UBC Mech and transferring with second year Math

UBC will accept a combination of an ODE plus PDE course for the blended differential equations course in second year Mech.

Policy on Repeated Courses

If a course is taken twice:

SFU takes the better of the two marks to compute the GPA

UBC counts all repeated courses within the last 30 credits completed

The meeting adjourned around 3:00