

BCCAT Engineering Articulation Meeting 2024 Minutes

May 2, 2024 | 10am-3:30pm

Langara College | Zoom

Attendance:

Martin Strange	BCIT	mstraneg@bcit.ca
Susan Chen	Camosun College	chen@camosun.ca
Peter Burrage	Camosun College	
Amir Amiraslani	Capilano University	amirhosseinamiraslan@capilanou.ca
Paul Ottaway	Capilano University	paulottaway@capilanou.ca
Regan Sibbald	Coast Mountain College	rsibbald@coastmounatincollege.ca
Barbara Rudecki	College of New Caledonia	rudecki@cnc.bc.ca
Dare Sokoya	College of the Rockies	
Maryam Samiei	Columbia College	
Jennifer Kirkey	Douglas College	kirkeyj@douglascollege.ca
Allan Majdanac	Douglas College	majdanaca@douglascollege.ca
Michael Poon (Host)	KPU	michael.poon@kpu.ca
Csilla Tamas	Langara College	ctamas@langara.ca
Hannah Gustafson	Langara College	hgustafson@langara.ca
Cesar Lopez Castellanos	Langara College	clopez@langara.ca
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Dennis Lightfoot	North Island College	Dlightfoot@nic.bc.ca
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Trevor Beugeling	UFV	Trevor.Beugeling@ufv.ca
Natalie Linklater	UNBC	natalie.linklater@unbc.ca
Peter Mulhern	University of the Fraser Valley	peter.mulhern@ufv.ca
LillAnne Jackson	UVIC	engradu@uvic.ca
Nafiseh Tohidi	Vancouver Community College	Ntohidi@vcc.ca
Brian Dick	Vancouver Island University	brian.dick@viu.ca

Guests: Irene Kuo BCCAT, Rob Flemming BCCAT

Minute Taker: Avery Lafortune

Meeting is called to order by Michael Poon at 10:00am.

1. Meeting Procedures, agenda and introductions

- Langara Elder Nk'xetko and Associate Vice President-Students Debbie Schachter welcome attendees.
- There are no changes or additions to the agenda.
- Approval of agenda is motioned by Peter Mulhern and seconded by Allen Majdanac. Motion is carried.

2. Reports and updates

a) 2023 Engineering Articulation minutes

- Herbert Tsang requested to change his email on the minutes.
- Peter Mulhern is added to non-voting attendees list.
- Paul Ottaway corrected the email of Bruno from Capilano University.
- Correction to item J North Island College (NIC)—Dennis Lightfoot: remove Chem 12 and Phys 12 as admission requirements. Students can complete those courses at NIC while working towards their certificate.
- Approval of the corrected minutes is motioned by Ken Langedyk and seconded by Peter Mulhern. Motion is carried.

b) BCCAT—Robert Flemming Executive and Irene Kuo

- This year is the 35th anniversary of BCCAT.
- The online resources “how to articulate” and “articulation committee guide” have been updated.
- Angus Graeme is the new council co-chair.
- The 3-year strategic plan includes rebuilding TCS platform and partnering with ONCAT to deploy TCS in Ontario.
- The Pathways project has two modules: the program module and pathway module.
- The program module is a prerequisite for the pathway module. It defines program requirements at the course level.
- The pathway module performs gap analysis between programs based on course-to-course agreements and leverages BCCAT’s system-level workflow in the pathway building process.
- JAM will take place November 7 and 8th at the Paradox hotel in Vancouver. A hybrid option is available on the 8th. Information is on the website.
- PCCAT / ARUCC Conference will take place June 24-27 in Calgary.
- Calls for Proposals are due between May 13th and 15th.

3. Institution Reports—Receiving Institutions

a) Simon Fraser University—Michael Sjoerdsma

- SFU has three engineering schools: one on Burnaby campus and two on Surrey campus.
- SEE, sustainable energy engineering was accredited last year. Enrollment numbers are lower than targets, but this is likely a reflection of its newness.
- Last year was the largest enrollment.
- The Graphics for Engineering Communication course is expanding from 1 credit to 3.
- The school of mechatronics reduced about 14 credit units to the program..
- PHYS 140 has been removed. MSC 103 is replacing PHYS 140. Students with 140 will complete a free bridging online course.
- Some realignment in later years that should not affect transfer agreement.

b) Thompson Rivers University—Catherine Tataruiuk

- TRU has the transfer program, Bachelor of software engineering and a new bachelor program.
- They were visited by the Canadian accreditation engineering board last fall and will hear the results in June.
- 108 students enrolled in the Bachelor of software engineering program.
- 31 enrolled in the transfer program.
- 231 applications for all three programs for fall 2024 intake.
- First-year projects and curriculum have not changed.
- The Tools for Change anti-harassment program is now a graduation requirement.

c) UBC Okanagan—Claire Yan

- Engineering enrollment makes up 18% of total university enrollment.
- Enrollment for 2022-2023 was relatively steady.
- The new computer engineering program will start this September.
- Students need 27 credits first-year credits to go into second year, otherwise they transfer into first year.
- Last year 433 students were accepted. This year's target is 320 direct-entry students and 100 international students.
- Options have been changed to concentrations for 2024. In past students were not able to complete their option courses by 4 or 5 year which delayed graduation. This change provides more flexibility.
- New 8-month bridge program with Okanagan college. The previous 4-month bridge program led to difficult scheduling and messy timetables for students. Once they finish the 8-month bridge, students enter 3rd year, 1st term.

- They implemented a new first-year wellbeing program to help students transition from high school to university.

d) UBC Vancouver—Carol Jaeger

- They are in the process of changing student information systems.
- Nine programs are under review this fall.
- Some programs are starting to reduce credits in the upper years. Lowering the number of courses trims down how many are taught by a professional engineer.
- Nothing has changed in the first-year courses.
- First-year acceptance is very competitive. They are more guarded on early offers based on term one grades. The GPA for conditional offers has been reduced.
- Mechanical, computer and engineering physics are the most competitive, sought after programs.

Discussion

- Core courses should be taught by those with P. Eng.
- Electives may be taught by non-engineers.
- Team teaching can ensure there is a professional engineer supervising.
- It is a logistics issue to ensure the right instructors are in front of students for the right courses.
- For transfers, we need to know who is teaching the courses and if they have a license.

e) University of Northern British Columbia—Natalie Linklater

- UNBC has 36000 students with 130 in engineering. Civil and environmental engineering are completely at UNBC with the first cohort of graduates in 2022-2023.
- Their third program is a joint program with UBC-V where students study at UNBC for two years, then spend two years at UNCV and return to UNBC for the final capstone project.
- All programs are showing pandemic impact.
- A technical elective is being added in 4th year as new faculty are hired.
- There are four active students transferring into the UNBC program.
- The Chair Mauricio is working to bring common first-year pathways online.
- Students with good academic standing are guaranteed entry.
- Civil and environmental engineering are online.

f) University of Victoria—LillAnne Jackson

- UVic has computer science, software engineering and computer engineer.

- Five out of six programs were on the accreditation docket. They will see results in June.
- They will ask who is teaching the courses and their license status.
- Civil engineering is doing accreditation this year.
- A new program called the Westshore Computing Gateway has been approved.
- The software program has not received many transfer students.
- They are putting chemistry back into first year and making engineering statics and elective. This may make it easier for students to transfer into software engineering. If students have the transfer credit for engineering statistics, it can be applied to something else.

g) British Columbia Institute of Technology—Martin Strange

- BCIT has 4 accredited engineering programs: electrical, civil, mining and mechanical.
- 132 students start in first year. 36 will move to the degree program after first year.
- Design projects are done in second and fourth years.
- They finished the accreditation process and will hear results in June.
- All faculty are P. Eng.
- Hydraulics and Numatics courses are now called fluid and power.
- Mech 1001 is a new course.
- They have full enrollment every year. The applicants to acceptance ratio is 2:1.
- Very few second-year transfers. These are done on a case-by-case basis.

4. Reports and Updates

a) CFYEC—Brian Dick from Vancouver Island University

- There are 13 sending institutions and 6 receiving institutions.
- Key objections of common curriculum include:
 - 1) Improve efficiencies at sending institutions.
 - 2) Assisting small institutions in developing and engineering focuses, creating opportunities for community engagement and partnerships.
 - 3) Improving the student learning environment.
 - 4) Enhancing quality reporting for accreditation processes.
- Contributors to the curriculum:
 - 1) All BCCAT Engineering articulation members.
 - 2) EGBC
 - 3) Funding support provided through: BCCAT, Ministry of post secondary education and future skills, BC Campus.
 - 4) All reports are available on the engineering articulation Moodle page.

- Summary of changes in CFYEC v 1.50
 - 1) Suggested admissions criteria changed (section 4.0)—applicants missing physics 12 or equivalent are encouraged to apply and will be reviewed on a case-by-case basis.
 - 2) Annual reporting for instructors of engineering specific courses included.
 - 3) UFV, Selkirk, OC added to signature page.
 - 4) SFU transfer appendix modified:
 - a. Engle II added to pathway explicitly for MSE and SEE.
 - b. SEE 111 credit removed.
 - c. CSCI I transfer to ENSC 151 validated.
 - 5) UBC/UBCO transfer appendices modified:
 - a. Engle II changed to an optional requirement.
 - b. Pathway expanded to all CFYEC PSIs under an enrolment management protocol.
 - c. Engle I transfer to WRDS 150 (from Engle 112) to match current practice
 - 6) Sending PSI to CYEC course unit table added as Appendix H.
- Moving forward:
 - 1) SFU transfer appendix for MSE pathway
 - 2) BCCAT pathways project

Discussion

- Note that physics 12 is suggested, not a requirement.
- When UVic made physics 12 an option rather than requirement, they saw an increase in their female demographic. Other demographics have also increased.
- Sometimes physics 12 is not available to students in northern BC.
- North Island has removed physics 12 and chemistry 12 as requirements. Students can now do those courses at North Island. Numbers and retention are better now than previous years.
- There are a few schools with transfer agreements with University of Alberta and they are familiar with the content.
- The upcoming Canadian Engineering Educators conference from June 15-17 is an opportunity to meet engineering educators from across the country.
- Brian Dick will upload v1.5. Currently v1.4 is uploaded.
- Douglas wants to sign on but it can be a challenge to offer English II. Is there any way to work around the English requirement?
- Students missing one of the language courses can still be admissible to UVic but if they are missing English II, their second year is not as seamless.

- One of the goals of the common curriculum is to provide clarity. Therefore, there is hesitancy around recommending students seek an advisor for assistance.
- There is a financial element for students who want a guarantee that the classes they take will transfer properly.
- The goal is to make the fall term consistent everywhere, but the spring term can have more flexibility. One of the early philosophies was to give students options so that they are not obligated to go to one institution because their credits cannot transfer elsewhere.

5. Institutional reports—Sending Institutions

a) Camosun College—Susan Chen

- Camosun has a 10-month program from September to June.
- Many students transfer to UVic because of the campus location.
- This year, the cohort increased from 28 to 35 students.
- Students find the seminar courses helpful for building community and wellness skills.
- All courses are 3 credits instead of 4 which makes common core alignment more challenging.
- A new EDI director was hired.
- Last year 35 students enrolled. Only three students were female and one of them dropped out. Female enrollment rate is very low. There were 2 international students. 25 students are moving on the UVic
- Progress was made to meet the common core. A combo transfer is a large problem since 40% of students only take one course. 1 to 1 transfer is better.
- Brian Dick confirms that Octave Online can be used instead of MATLAB for Algebra 1.
- Civil Engineering now bridges to UVic. They have applied for a UBC bridge program.

b) Capilano University—Amir Amiraslani

- Capilano has a 1-year certificate and a 2-year transition diploma program.
- So far, they have 164 applicants for the certificate and 164 applicants for the transition diploma program.
- Capilano has purchased a campus in Squamish.
- They are offering three micro credentials supported by a grant: CAD, prototyping and management of prototyping.
- They are forming an advisory committee to see how they can go beyond transfer programs and establish an independent engineering department.
- They received a 1.4M grant, part of which will be used for engineering projects.

- The intended audience for the micro credentials is seasoned practicing engineers. There has been significant interest from international students as well as local high school students. They want to create two pathways, one for the main target audience and the other more suited to high school students.
- c) Coast Mountain College—Regan Sibbald
- Last year 15 students enrolled and 9 are moving on.
 - This year there are only 4 applicants.
 - With such low enrollment, there is uncertainty if the program will continue.
 - The college is happy with program and the students coming out of it have been successful; however, the community is quite small and there are opportunities for students to take engineering elsewhere.
 - They received government funding for renovations and new labs and equipment.
 - The spring design courses were cancelled due to low enrollment. The students are doing the courses online with VCC this summer.
 - They have done lots of community outreach, but it is possible there are not enough people in the region to support the program.
 - They have a P. Eng. instructor.
 - Many students have been hired in locally in engineering-related jobs after their first year.
- d) College of New Caledonia—Barbara Rudecki
- The program was successfully delivered for the fourth time.
 - Enrollment was low but they are hopeful for next year. Ten students have registered already.
 - A P.Eng. teaches the design courses. A guest speaker is also P.ENG.
 - There was discussion around changing English 12, but it has been put on hold.
 - They are currently discussing dual credits with high schools.
- e) College of the Rockies—Dare Sokoya
- Most students transferred to UVic and some to Saskatoon.
 - Enrollment is around 12-13 students, most of which are domestic.
 - They want to tap into international market for engineering.
 - Currently, they have an instructor with EIT designation, but a P. Eng. instructor is helping with the design courses.
 - They are unsure about the impacts of international student policies and how they might impact enrollment numbers.

- There is discussion around developing an 8-month program so that students have opportunities to enter UBC-O.
- f) Columbia College—Maryam Samiei
- Enrollment is steady.
 - They have developed new courses in Eng 1 and Eng 2 and are hoping to get faster agreements with new universities.
 - However, it may not be practical for our students to take more courses. This process has been paused and will be reconsidered in the future.
- g) Douglas College—Allen Majdanac
- The program is growing slowly and new sections have been added.
 - 45-50 students are coming in.
 - The conversion rate is the problem. Students pay money to hold a seat and then peel off.
 - They did not have a very successful cohort this year. There were a lot of learning struggles, but it is hoped that this was a one-off experience.
 - A new lab facilitator was hired.
- h) Kwantlen Polytechnic University—Michael Poon
- The Surrey campus has 30 students which is good; however, the Richmond campus enrollment is much less.
 - The Richmond campus has not been adequately promoted.
 - They are looking to develop a 2-year diploma to leverage what is offered in first-year engineering and what is offered with the physics degree. This will allow students to transfer to engineering elsewhere or go on to year 3 and 4 at KPU for the physics degree.
 - Close to 50% of students are over the age of 18. Fewer female students.
- i) Langara College—Csilla Tamas
- Langara offers a 2-semester certificate and a 2-year diploma.
 - There are no curriculum changes to report.
 - This year's engineering cohort was the best in the past 5 years with 30-plus students meeting the 3.1 program GPA out of the total 60 who started in the Fall.
 - In the certificate program, 43% of students have come from high school and 35% from Langara, the rest are from various backgrounds.
 - This year there were 380 Applicants for the certificate program.

- The first semester engineering design course focuses on a useful, usable project designed to help someone in the community.
- They have organized engineering panels with practicing engineers for students to network and learn about the field.
- Female population is approximately 15% in both programs. They run a mentoring program for female students. It does not seem to increase the number of female students but it does help those already enrolled feel more comfortable.
- They have a new provost and the dean who was very supportive of the program has retired.

j) Okanagan College—Ken Langedyk

- They have ensured their program works with UBC-O which is where their students go.
- Cohorts range from 5-15 students with a success rate of about 60%. They had hoped to be up to 30 students by now.
- In a survey students reported they struggled with completing their work in time and were more focused on completing it than learning the material.
- Kelowna has a large construction market.
- The average student age is 17. It is hard to find mature students.
- 90% of instructors are P.Eng. certified.
- They went through tech and accreditation processes in all programs without issue.
- Gateway to Technology and Engineering is a program offered to high school students. It promotes engineering and brings high school students to campus.

k) North Island College—Dennis Lightfoot

- This year, saw the largest class in the past 10 years. Roughly half of the students were continuing from last year.
- Curricular changes include adding a lab to Intro to Engineering and increased credits. Design courses were originally patterned after UVic courses; however, the 2-hour lecture did not include expectations outside of class hours. This time is now included in the class hours.
- A work term course was added.
- Dennis is the P. Eng. instructor. Another colleague is working towards their P.Eng. designation.

l) Northern Lights College—Hamid Baheri

- No changes in engineering courses.

- Enrollment was low this year. Normally they have 5-10 students but this year they had 2.
- They have started a marketing campaign and hope to get more students by September.

m) Selkirk college—Adesola Olufade

- Enrollment was down this year to 8 students from 11 last year and 15 in 2021.
- Working to raise awareness of the engineering certificate program to the local communities.
- They have organized training sessions to teach students job application skills and how to write applications to transfer into university.
- They hope enrollment will increase and are looking to create new agreements with receiving institutions.

n) Trinity Western—Herbet Tsang

- The practical science program saw a 67% increase in enrollment.
- Some students in the engineering transfer program are already accepted to UBC-O.
- Faculty have rectified their collective agreement.

o) University of the Fraser Valley—Peter Mulhern

- They offer a diploma in mechatronics and an engineering certificate.
- Enrollment numbers in first-year classes have increased to 50.
- They have changed the registration system to make it easier for students.
- There is huge divergence in students. Some do very well and others very poorly.
- They are currently hiring.
- Students are having issues with workload and time management.
- Out of the 30 students who completed the course, 15 achieved grades of B and above and 15 were C and below.
- Students who are struggling are not putting in the hours that the A students are.

p) Vancouver Community College—Nafiseh Tohidi

- No changes in courses.
- Enrollment is overall increasing.
- Students can transfer to SFU and UBC.

q) Vancouver Island University—Brian Dick

- First year enrollment numbers are steady.

- There is limited persistent support of new programs from the institution.
- They are losing capacity and spending a lot of time addressing this impact on students.
- A new book was published. It includes most of the information covered for first-year students at a low cost.
- EGBC student membership is offered to students and most take advantage of it.
- To improve mental health, students are asked to make a personal time off plan to find alternative things to do outside of school.
- They are looking at a survey instrument for all post secondary institutions in BC to determine what demographics have the most challenges moving through the system.

Discussion

- There is no data on sending students success rate specifically for engineering.
- It is suggested that students be contacted one or two years after they leave to gather this data.
- BCCAT's data generally supports that transfer students do as well as direct students as far as GPA.
- UNBC surveys their students often and could add questions to existing surveys.
- Rather than individual surveys, we could look at how many years it takes for students to complete their degrees. Longer than 3-4 years signifies an issue.
- That could be valuable data but there is also nuance around why it might take students longer to complete a degree other than academic struggles.
- It is noted if students from a particular institution are failing consistently.
- It is common for grades to drop in the first semester and then recover later.
- Sending institutions will have a program coordinator and most institutions have release time associated with it.

6. Dates and Location of 2025 & 2026 meetings

- Next year will be May 1, 2025 in Prince George.
- Physics and Engineering Articulation will happen together again with one day at CNC and the other at UNBC.
- Natali and Barbara will determine which day is at which location.
- The following year will be May 7, 2026 in Kelowna.
- UBCO and Okanagan College will share hosting duties.

7. Wrap up and Adjournment

- At Okanagan College students are sent an FAQ that covers basic questions about transitioning to post-secondary that has solved a lot of issues with students and stress management.
- Michael Poon will collate all reports into one file.
- Claire Yan suggests a standard name convention so its easier to find the right report.

Michael Poon adjourns the meeting at 3:24pm.