

# Physics and Astronomy Articulation Committee Minutes

British Columbia Council on Admissions and Transfers (BCCAT)

Room 3-311, Main Campus Building Complex

College of New Caledonia, Prince George, BC

May 2, 2025

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# Agenda

Time	Topic	Presenter
8:30 - 9:30	Breakfast, Meet & Greet	
9:30 - 10:00	Welcome and Call to Order Indigenous Greeting / Prayer: <ul style="list-style-type: none"> <li>Dr. Jessie King, Vice President: Indigenization</li> </ul> Institutional Greeting: <ul style="list-style-type: none"> <li>Wendy Male, Dean, School of Human Services University Transfer and Business Studies</li> </ul> Attendance	
10:00 - 10:10	Approval of Agenda and Any Additional Items Approval of Previous Minutes (May 3, 2024) Business Arising from Previous Minutes	
10:10 - 10:30	BCCAT Updates	Anabella Chun
10:30 - 10:45	SLP Report	Jennifer Talman
10:45 - 11:00	Morning Break	
11:00 - 12:30	Presentation of Institutional Reports	
12:30 - 1:30	Lunch Break	
1:30 - 3:15	Discussion Items: <ul style="list-style-type: none"> <li>Labs</li> <li>Academic Preparation</li> <li>Artificial Intelligence</li> <li>Equity, Diversity, Inclusion; Open Education Resources</li> <li>Moodle</li> </ul>	
3:15 - 3:30	Election/Re-Election of Chair Next Meeting: <ul style="list-style-type: none"> <li>Location: Okanagan College, Kelowna</li> <li>Date: May 1, 2026</li> </ul>	

# Meeting Minutes

## Attendance

Member	Institution	E-mail	In-Person / Online / Regrets
Kelly Cheung	Alexander College	<a href="mailto:k.cheung@alexandercollege.ca">k.cheung@alexandercollege.ca</a>	In-person
James Brewer	BCIT	<a href="mailto:james_brewer@bcit.ca">james_brewer@bcit.ca</a>	In-person
Ed Nelson	Camosun College	<a href="mailto:nelson@camosun.ca">nelson@camosun.ca</a>	Online
Stephanie Ingraham	Camosun College	<a href="mailto:ingrahams@camosun.ca">ingrahams@camosun.ca</a>	Regrets
Lauren Moffatt	Capilano University	<a href="mailto:laurenmoffatt@capilanou.ca">laurenmoffatt@capilanou.ca</a>	Online
Regan Sibbald	Coast Mountain College	<a href="mailto:rsibbald@coastmountaincollege.ca">rsibbald@coastmountaincollege.ca</a>	Online
Barbara Rudecki	College of New Caledonia	<a href="mailto:rudecki@cnc.bc.ca">rudecki@cnc.bc.ca</a>	In-person
Ben Tippett	College of the Rockies	<a href="mailto:btippett@cotr.bc.ca">btippett@cotr.bc.ca</a>	Regrets
Kanika Pasrija	Columbia College	<a href="mailto:kpasrija@columbiacollege.ca">kpasrija@columbiacollege.ca</a>	Online
Saeed Faraji	Coquitlam College	<a href="mailto:sfaraji@coquitlamcollege.com">sfaraji@coquitlamcollege.com</a>	Online
Alain Prat	Corpus Christi College	<a href="mailto:alainprat@corpuschristi.ca">alainprat@corpuschristi.ca</a>	Regrets
Will Gunton	Douglas College	<a href="mailto:guntonw@douglascollege.ca">guntonw@douglascollege.ca</a>	Online
Jennifer Kirkey	Douglas College	<a href="mailto:kirkeyj@douglascollege.ca">kirkeyj@douglascollege.ca</a>	In-person
Peter Smith	Fraser International College	<a href="mailto:smip@learning.fraseric.ca">smip@learning.fraseric.ca</a>	Online
Michael Poon	Kwantlen Polytechnic University	<a href="mailto:michael.poon@kpu.ca">michael.poon@kpu.ca</a>	In-person
Takashi Sato	Kwantlen Polytechnic University	<a href="mailto:takashi.sato@kpu.ca">takashi.sato@kpu.ca</a>	In-person
Tyron Tsui	Langara College	<a href="mailto:ttsui@langara.ca">ttsui@langara.ca</a>	In-person
Saeed Faraji	LaSalle College	<a href="mailto:sfaraji@lasallecollegevancouver.com">sfaraji@lasallecollegevancouver.com</a>	Online
Dennis Lightfoot	North Island College	<a href="mailto:dennis.lightfoot@nic.bc.ca">dennis.lightfoot@nic.bc.ca</a>	Online
Jennifer Fallis Starhunter	North Island College	<a href="mailto:jennifer.fallisstarhunter@nic.bc.ca">jennifer.fallisstarhunter@nic.bc.ca</a>	Online
Terry Bridges	Okanagan College	<a href="mailto:tbridges@okanagan.bc.ca">tbridges@okanagan.bc.ca</a>	Online
Jason Nickel	Selkirk College	<a href="mailto:jnickel@selkirk.ca">jnickel@selkirk.ca</a>	Online
Jeffrey McGuirk	Simon Fraser University	<a href="mailto:jmcguirk@sfu.ca">jmcguirk@sfu.ca</a>	Online
Abedin Abedin	Thompson Rivers University	<a href="mailto:aabedin@tru.ca">aabedin@tru.ca</a>	Online
Anusha Venkataraman	Thompson Rivers University	<a href="mailto:avenkataraman@tru.ca">avenkataraman@tru.ca</a>	Online
Robin Kleiv	Thompson Rivers University	<a href="mailto:rkleiv@tru.ca">rkleiv@tru.ca</a>	Online
Arnold Sikkema	Trinity Western University	<a href="mailto:arnold.sikkema@twu.ca">arnold.sikkema@twu.ca</a>	In-person
Alireza Kazemi	University Canada West	<a href="mailto:alireza.kazemi@ucanwest.ca">alireza.kazemi@ucanwest.ca</a>	Online
Tom Mattison	University of British Columbia	<a href="mailto:mattison@physics.ubc.ca">mattison@physics.ubc.ca</a>	Online
George Jones	University of Northern British Columbia	<a href="mailto:george.jones@unbc.ca">george.jones@unbc.ca</a>	In-person
Peter Mulhern	University of the Fraser Valley	<a href="mailto:peter.mulhern@ufv.ca">peter.mulhern@ufv.ca</a>	Online
Jeff Chizma	University of the Fraser Valley	<a href="mailto:jeff.chizma@ufv.ca">jeff.chizma@ufv.ca</a>	Online
Trevor Beugeling	University of the Fraser Valley	<a href="mailto:trevor.beugeling@ufv.ca">trevor.beugeling@ufv.ca</a>	In-person
Carmen Herman	University of the Fraser Valley	<a href="mailto:carmen.herman@ufv.ca">carmen.herman@ufv.ca</a>	Regrets

Mark Laidlaw	University of Victoria	<a href="mailto:laidlaw@uvic.ca">laidlaw@uvic.ca</a>	Online
Nafiseh Tohidi	Vancouver Community College	<a href="mailto:ntohidi@vcc.ca">ntohidi@vcc.ca</a>	Online
Brian Dick	Vancouver Island University	<a href="mailto:brian.dick@viu.ca">brian.dick@viu.ca</a>	In-person

Jennifer Talman	BCIT	<a href="mailto:jennifer_talman@bcit.ca">jennifer_talman@bcit.ca</a>	In-person
Anabella Chun	BCCAT	<a href="mailto:achun@bccat.ca">achun@bccat.ca</a>	Online

## Welcome and Call to Order

- The meeting officially started at 9:30 am.
- Dr. Jessie King, Vice President: Indigenization and Wendy Male, Dean, School of Human Services University Transfer and Business Studies welcomed us to College of New Caledonia, Prince George.

## Approval of Agenda and Any Additional Items

- The agenda is approved and there is no addition to the agenda.

## Approval of Previous Minutes

- The meeting minutes are approved and there are no corrections noted.

## BCCAT Reports: Anabella Chun

### Report Highlights

- The presentation slides are available for everyone to review:  
<https://www.bccat.ca/resources/ACUpdate202504.pdf>
- JAM 2025: November 6 (online) and 7 (hybrid)
- Ontario Council on Articulation and Transfer (ONCAT) adopting BC TCS for use in Ontario
- BCCAT is working with TRU Credit Bank regarding micro-credential pathways to degree programs on TCS.
- Currently reviewing BCCAT's technology platform to modernize TCS.
- Publications now available on:
  - Simultaneous Enrolment & Letters of Permission in the BC Transfer System:  
<https://www.bccat.ca/publication/simultaneouse enrolment/>
  - BC Transfer Students: Profile and Performance Report (2018/19-2022/23):  
<https://www.bccat.ca/publication/bctransferstudents2024/>
  - Upgrading Programs:  
<https://www.bccat.ca/publication/upgradingprograms>
  - BCCAT Annual Report 2023-24:  
<https://www.bccat.ca/publication/annualreview2024/>

## SLP Report – Jennifer Talman

### Report Highlights

- Expect the current situation regarding international enrolment to continue in upcoming years.
- Institutions have been reducing positions and eliminating programs.
- Academic integrity and artificial intelligence along with continuing to support student mobility through credit transfer are the main topics being reviewed.

## Institutional Reports Highlights

### Alexander College

- Looking to increase pathway agreements with other institutions to provide more options for students.

### BCIT

- Examining requirements to receive diplomas due to credits required being more than at other institutions.
- Looking at whether PHYS 12 should be accepted as part of the 6 credits of university physics needed to enter the radiation therapy program. Some institutions have PHYS 12 equivalent as 0XX while others have 1XX.
- Asking institutions to verify whether the transfer tables in their institution report are correct.

### Camosun College

- Astronomy enrolment is growing and physics enrolment is stable.
- Restructured so that physics is now part of the School of Science, Technology, Engineering, and Mathematics.

### Capilano University

- Looking at a new astronomy lab being developed along with a second year course that covers space exploration and orbital mechanics.

### Coast Mountain College

- Students' ability to transition from high school to university and pre-calculus 12 larger indicators of success in university physics courses than physics 12.

### College of New Caledonia

- Restructuring from four schools to three schools.

#### Columbia College

- Looking at the creation of an algebra-based physics courses for students without physics 12.
- Electricity and magnetism offered as a self-directed course with the labs scheduled in-person.

#### Coquitlam College

- Found students typically take physics courses during the last year of their studies.

#### Corpus Christi College

- Due to enrolment, a small number of physics courses are being offered.

#### Douglas College

- There is an increase in enrolment in the calculus-based courses due to the number of students in the engineering program but a decrease in enrolment in the second semester algebra course possibly.

#### Fraser International College

- Physics enrolment is steady as the courses are required for STEM programs.
- Held a physics fair for PHYS 100 (race tracks), PHYS 140 (formula 1), and PHYS 141 (space exploration). Students are not provided with a budget and can build their project out of cardboard for instance.
- Examining having peer reviews as part of the final report and more written assignments.

#### Kwantlen Polytechnic University

- Currently, the Richmond campus offers the courses required for the Bachelor of Science in Physics for Modern Technology. They are looking at moving the second year courses of the program to the Surrey campus after receiving feedback from a student survey.

#### Langara College

- Asked whether institutions have lab exams. Some institutions have lab exams while others do not.

#### LaSalle College

- Offers two physics courses without physical lab components.

#### North Island College

- Will host Science World on May 24, 2025.



#### Okanagan College

- Offered classical mechanics for the first time and looking to offer a new second year astrophysics course alternating with UBCO.

#### Selkirk College

- Use Excel in their labs; students appreciate learning it in the labs.

#### Simon Fraser University

- New certificate in Data Science in Physics to launch in 2025.

#### Thompson Rivers University

- Offered an interdisciplinary course in nanotechnology in Winter 2025.

#### Trinity Western University

- Considering creating a physics course specifically for life science students.

#### UBC Vancouver

- Examining reducing the number of credits in the Honours Physics Program.

#### University Canada West

- Physics courses offered in a hybrid format.
- Looking at having in-person labs in place of online labs for physics courses.

#### University of the Fraser Valley

- PHYS 112 to be revamped and replaced with PHYS 118.

#### University of Northern British Columbia

- Examining students entering first-year science as a cohort.

#### University of Victoria

- Two physics courses that are being offered to second year students will be offered as 3<sup>rd</sup> year courses in 2025/2026.
- Reconfiguring lab sequence for physics students.

### Vancouver Community College

- Found that hybrid courses are more popular with students than in-person.

### Vancouver Island University

- Looking for a different software for their astronomy courses.
- Find students take physics courses as late as possible.

## Discussion Items

### Labs

- Can incorporate Python, Jupyter notebooks, [Introduction – Introduction to Syzygy](#) into labs. Students can enter their measurements into the notebook; the notebook will create a graph for the students to analyze. Another option is providing data for students to practice analyzing. As students get more familiar with the tools, they can consider copy/paste lines of code or use AI to help create code.

### Academic Preparation

- It is found that high school graduates are not prepared for first year calculus.
- We have asked the BCCAT Math-Statistics articulation committee to consider whether it is possible to have provincial exams for mathematics. They will bring up this topic at their committee meeting next year.
- Some institutions have a quiz at the beginning of the course and/or mathematics refresher modules for students to review.

### Artificial Intelligence

- Bubeck et al. have been examining the capabilities and limitations of GPT-4.
  - <https://arxiv.org/pdf/2303.12712>
- West from University of Colorado has been examining GPT-4 on solving the force concepts inventory questions:
  - <https://arxiv.org/pdf/2303.17012>
  - GPT-4 scores 28/30 compared to GPT-3.5 that got the correct answer for 15/30.
  - He examines the limitations such as “completely incapable of reproducing the reasoning of a novice” and “failed spectacularly at responding to questions which did not adopt the canonical tone and nomenclature of a physics problem” and concludes the following including a quote from Bubeck et al. that GPT-4 can “solve complex mathematics problems and hold meaningful discussions about advanced mathematics, even as it ‘can also make very basic mistakes and occasionally produce incoherent output that may be interpreted as a lack of true understanding’”.

- Face-to-face and pen tests are still the best in determining student knowledge of the physics material.
- In the classroom, instructors provide guidance and create relationships with students that have enduring value along with providing students the opportunity to learn lab and soft skills.
- Can consider a flipped classroom model where students watch recordings before the class and spend time completing questions in-class. As there are no marks associated with the practice questions in class, there is no benefit to using AI in this situation. Opportunities for discussion about the answers can be enlightening for the students.
- Resources:
  - <https://uwaterloo.ca/conflict-management-human-rights/ai-human-rights-impact-assessment-tools>
  - <https://www.youtube.com/watch?v=0xS68sl2D70>
  - <https://www.youtube.com/watch?v=UBVV8pch1dM>
  - <https://punyamishra.com/2024/11/30/when-truth-doesnt-matter-ai-falls-for-illusory-optical-illusions/>
  - [https://www.microsoft.com/en-us/research/wp-content/uploads/2025/01/lee\\_2025\\_ai\\_critical\\_thinking\\_survey.pdf](https://www.microsoft.com/en-us/research/wp-content/uploads/2025/01/lee_2025_ai_critical_thinking_survey.pdf)

#### Equity, Diversity and Inclusion, Open Educational Resources

- Students can only use basic scientific calculators on tests. Some instructors also provide students with a formula sheet while others allow students to create their own formula sheet to bring into exams.
- Institutions need to have policies regarding behavioural issues arising in labs and/or students not attending labs especially when projects are involved.
- For missed exams, some institutions move the weight onto the final exam, but if two midterms are missed, the student needs to write a make-up midterm.
- Mechanics Map with WebWork problems can be used instead of Hibbeler (10 GB module):
  - <http://mechanicsmap.psu.edu/>
  - <https://github.com/ubc-mech2/OER-mechanics-webwork/tree/master/OER%20Mechanics%20WeBWork%20Current%20Problems>

#### BCCAT Moodle

- Kelly will upload minutes and important information onto the BCCAT web page in the case that e-mails cannot be received.
- Details to create an account and access (need to create an account):  
[https://moodle.bccat.ca/pluginfile.php/2436/mod\\_resource/content/18/MoodleSelfEnrollmentInstruction.pdf](https://moodle.bccat.ca/pluginfile.php/2436/mod_resource/content/18/MoodleSelfEnrollmentInstruction.pdf)

Election/Re-Election of Chair & SLP, Next Meeting

- It was a unanimous decision for Kelly to remain as the meeting chair for next year. Jennifer Tolman agreed to be the SLP for physics and astronomy next year.
- Next meeting is scheduled at Okanagan College, Kelowna on Friday, May 1, 2026.

**Meeting is adjourned at 3:19 pm**