

# 2021 ABE Mathematics Working Committee Meeting

## Minutes

Draft

BRITISH COLUMBIA COUNCIL ON ADMISSIONS AND TRANSFER (BCCAT)

Thursday/Friday, 4 and 5 March 2021

Via Zoom

Zoom Link: <https://yukonu-ca.zoom.us/j/96178281179>

Meeting ID: 961 7828 1179

**NOTE: All times are in PST**

Co-Chairs: Robert Ferro, Yukon University  
Costa Karavas, Vancouver Community College  
Vice-Chair: Michael Nelligan, Coast Mountain College

British Columbia Institute of Technology	BCIT	Winona Cordua-von Specht
Camosun College	CC	Catherine Frost Puja Gupta Zahra Khimji Patrick Montgomery
Capilano University	CAPU	Richard Brand
College of New Caledonia	CNC	John Pacheco
College of the Rockies	COTR	Deb Heal
Douglas College	DC	Florica Alexandru
Kwantlen Polytechnic University	KPU	Tanya Boboricken
Langara College	LC	Nora Franzova
Native Education College	NEC	No Representative present
Nicola Valley Institute of Technology	NVIT	No Representative present
North Island College	NIC	Tony Trudel
Northern Lights College	NLC	Marcie Lundin
Coast Mountain College	CMTN	Michael Nelligan
Okanagan College	OC	Mike Rutten
Selkirk College	SC	Kate Tait
Thompson Rivers University	TRU TRU-OL	Izabela Mazur Bruce Irving
University of the Fraser Valley	UFV	No Representative present
Vancouver Community College	VCC	Costa Karavas Ellen Turone
Vancouver Island University	VIU	Carol Ramey
Yorkville University	YVU	Mandev Singh – Day 1 only
Yukon University	YU	Robert Ferro

## Thursday, 4 March 2021

9:30 a.m. – 10:00 a.m. Zoom social in breakout rooms.

- 1) Opening remarks and introductions
  - a) Robert – welcome
  - b) Question of whether we should record the meeting – open to discussion
    - i) **All agreed that a recording is ok with the option to go off camera at times**
  - c) Names on Zoom should reflect full name and institution's name
- 2) **Approval of Agenda**
  - a) **M/S/C**
- 3) Review Purpose of Meeting
  - a) Reminder that meetings are not just for reviewing outlines. Networking and sharing experience and resources are important as well.
- 4) Approval of minutes of 5-6 March 2020, meeting at KPU, Richmond BC
  - a) **ACTION: Robert to make edit.**
    - i) **Bottom of page 3 needs an edit to reflect that this statement was Pooja's approach not Camosun College's as a whole. Wording should be... "Status of indigenization? Pooja Gupta (Camosun) discussed the approach that she is taking. Focus on welcoming environment, circle classes to meet elders and discussing concerns and experiences, layout of classes, evaluation of courses..."**
  - b) **Motion to approve the ABE Mathematics Working Committee Meeting minutes from 2020**
    - i) **M/S/C**
- 5) Action items resulting from minutes of 2020 meeting
  - a) **Co-chairs will bring forward the idea of creating an ABE equivalent to Foundations of Mathematics 12 to the Steering Committee to inquire about options for funding.**
    - i) There was not a steering committee meeting in 2020.
    - ii) BCCampus freeze on funding is now open.
    - iii) Can only make a recommendation through the steering committee.
    - iv) **ACTION: Robert will continue to pursue this funding.**
  - b) Idea to get a guest speaker to next year's meeting who has experience with indigenization. **ACTION ITEM: Costa will look into funding to support this.**
    - i) Not arranged for this meeting
    - ii) **ACTION: Costa will continue to look into options for an indigenization speaker at a future meeting.**
- 6) Updating members list and transfer guide
  - a) OneDrive editable document put in the chat for folks to sign as an attendance record

- b) OneDrive editable document put in the chat to confirm institution committee membership
  - c) OneDrive editable document put in the chat for Transfer Guide changes
- 7) Reports/Updates
- a) BCCUPMS report—Costa Karavas
    - i) BC Committee on the Undergraduate Program in Math and Statistics
    - ii) Meets in May usually – not last year – June 16 and 18 instead.
    - iii) BC Ministry of Education report – High Schools going through big challenges with Covid – asked Committee questions to generate ideas
      - (a) For Post-Secondary Institutions, what are priority learning outcomes for Grade 12 students?
      - (b) What are considered short- and long-term issues for the Covid situation?
      - (c) How to ensure a smooth transition from Secondary to Post-Secondary?
      - (d) Decisions have been left up to the school boards primarily
      - (e) Each district did different things which created differences in Learning Outcomes
    - iv) Flexible pre-major in Math- BC Cat is not supporting this – not updating website
    - v) Statistics committee – new courses in Data Science
    - vi) Mike from BCCAT spoke at meeting – stale transfer agreements – need to go back and review to update
    - vii) OER resources and web work
    - viii) Long discussion on cheating – how to administer exams online – how to minimize – survey done to pool info on cheating
      - (a) Chegg.com, Course hero, Cramster, Wolfram, Integral calculator, etc
      - (b) Some against having cameras on students – privacy
      - (c) Two cameras – one on student and one on screen
      - (d) Critical thinking questions
  - b) Joint Annual Meeting of Institutional Contact Persons (ICPs), Chairs, and System Liaison Persons (SLPs)—no report as this was open to all committee members
    - i) All recorded on the BCCAT YouTube channel
    - ii) [https://www.youtube.com/channel/UCekj2w\\_orRdumXCxl-it-dw](https://www.youtube.com/channel/UCekj2w_orRdumXCxl-it-dw)
  - c) BCCAT report—Mike Winsemann (10:45 am)
    - i) Director of transfer and technology
    - ii) Equivalencies to ABE into the main course search of the transfer guide
    - iii) Covid dominated work over the last year
    - iv) All online for meetings
    - v) 2/3 of committees went ahead with meetings
    - vi) All should meet within the year
    - vii) Zoom seemed to be the platform of choice
    - viii) Pivot to online teaching – impact to transfer credit?
      - (a) Has not had a big impact
      - (b) Science based labs?

ix) JAM – Joint Annual Meeting

- (a) Online this year
- (b) Two day conference - >350 people attended
- (c) Used Whova
- (d) JAM will happen again this year online first week of November
- (e) All members of articulation committees invited
- (f) Provided link to a BCCAT YouTube channel Research reports
  - 1. Published on website
  - 2. Report on who decides transfer
    - a. When and with whom to articulate
  - 3. Microcredentials report – very popular
    - a. <https://www.bccat.ca/intro/MicroCredentialsReport>
  - 4. Block transfer report

(g) ABE

- 1. Met with steering committee
- 2. Take equivalencies in pdf doc and make more accessible
- 3. Bring those ABE equivalencies into the transfer credit system
- 4. Different data model – institutions articulate to standards
- 5. What does this mean for update process?
  - a. For now – no changes - BCCAT will take and update manually
  - b. Will change in future – will be able to electronically update ABE listing directly – registrar at each institution
- 6. Goal to go live later this spring
- 7. Once approvals are met – transfer coordinator at each institution can then update throughout the year – or annually at Articulation meeting.
- 8. Approved at articulation meetings – then steering committee makes final say to endorse – then individual institutions will then make the changes electronically
- 9. Question – Will there be a change to the name ABE – possible to AU – adult upgrading? Up to the steering committee – BCCAT will use whatever name they are told to use. Mike will look into what name is “official”
- 10. There’s another committee called the First People’s working group.
- 11. [mwinsemann@bccat.ca](mailto:mwinsemann@bccat.ca)

≈ 11:00 a.m. – 11:15 a.m. **Break**

- 8) Roundtable discussion: Effects of Pivoting to Online Learning due to COVID-19
- a) What changes have been made at institutions?
  - b) Have resources, academic help, for students changed?
  - c) Any changes in academic regulations to accommodate for pandemic?
  - d) Have student numbers decreased due to pandemic?
  - e) Math assessments—what is a good way to administer them during pandemic?

- a. Isabella – TRU
  - i. all classes are virtual
  - ii. after one year working on a return to campus plan
- b. Puja – CC
  - i. had lots of student supports in place
  - ii. Bookstore items were mailed
  - iii. Food vouchers for students
  - iv. Technology support – laptops
  - v. Students that are comfortable are registering, but many are not
  - vi. Math enrollments are higher overall – can accommodate more students online
  - vii. Math assessment – not many cases of cheating – cameras on during test – builds trust with students
- c. Zahra – CC
  - i. numbers are higher
  - ii. More opportunities for students
  - iii. Not experiencing plagiarism
  - iv. This semester proved that online teaching is possible
- d. Tanya – KPU
  - i. Increase in enrollment overall
  - ii. Likely still be online in the fall
  - iii. Student and faculty surveys
  - iv. Students would prefer to have some online options in future – a mix with face-to-face
  - v. Laptop availability for students – loans
  - vi. Purchased tablet for white board writing
  - vii. KPU wouldn't cover costs at first but some funding now
  - viii. Assessments happening virtually – Elevate My Math – EMM looks promising for virtual math testing
  - ix. Providing resources for students
  - x. Lots of discussions around privacy – don't want cameras on during tests
  - xi. Students fill out academic integrity contracts
  - xii. But still noticing some cheating
- e. Nora – LC
  - i. Not allowed to use Zoom for invigilation.
  - ii. Asks students nicely to be on Zoom but not required
  - iii. Fill out an Academic Integrity form/contract
  - iv. Academic Integrity violations increased 600%
  - v. Laptop rentals available for students
  - vi. AUG grants - \$500 for students to go towards a laptop
  - vii. Had to fight for faculty laptops
  - viii. Student numbers similar to pre-Covid
  - ix. Lost international students
  - x. Assessments – made one online on Brightspace– multiple choice - time limits – can't go back to look at previous questions – would prefer to go back to paper

- xi. 50 – 80% of classes hopefully back face-to-face in the fall
- xii. Supposed to get WebWork – can be integrated into Brightspace
- xiii. WebWork – provincial license? Provincial server? Huge repository of questions – UBC uses
  - 1. Tanya – WebWork - fully integrated with Moodle
- f. Bruce – TRU OL
  - i. Pandemic a bonus for TRU-OL since already set up
  - ii. All exams have gone to ProctorU – works out quite well
  - iii. OL concerned with academic integrity – studies ongoing on how to reduce
  - iv. Face-to-face exam centers are shut down
  - v. Pre-Calculus can't write final exam, so grade based on Unit tests
  - vi. Student engagement is higher – sitting at home without as much to do!
- g. Florica
  - i. Great support from Douglas college
    - 1. Blackboard program
    - 2. License for Zoom
    - 3. Instructors get \$40 for internet each month
    - 4. Doc cam borrowed from college – great for writing to students
    - 5. Big challenge with international students
      - a. Lots from India.
    - 6. Enrollment is steady
    - 7. Feedback to students – Blackboard has feature to markup and provide feedback – produces a bank of feedback comments that can be cut and paste to make more efficient
    - 8. Academic Integrity issues are more common
      - a. Photomath – Chegg – integrity concerns
    - 9. Test questions would show up on Chegg
    - 10. Contacted Chegg to get questions removed..
  - ii. Kate – Selkirk
    - 1. Chair role for the pandemic year
    - 2. Tablets for all instructors
    - 3. All-in-one desktop computers for instructors
    - 4. Economic divide for students was an issue
    - 5. AUG funding - \$500 was helpful
    - 6. Placement – intake instructors help with paperwork
      - a. Moved to self-diagnosis
      - b. Results quite good
      - c. Students are usually honest about their current math level
    - 7. Moved away from traditional mid-term to a concept map - has been really successful – but lots of work
    - 8. Take home lab packages for Physics – cost covered by Service Enhancement Funds
  - iii. Marcie
    - 1. Exams in person

2. Limit of number of student in room but small classes – eight at a time
3. Good indicator of whether they have been cheating up to then
4. Was doing online teaching before – on mat leave for most of pandemic
5. Lecture style online delivery as well as continuous intake
6. Certain questions require students to use a certain format/approach – which might minimize photomath solutions
7. Some classes are in person
  - a. Lowest level of computer studies
8. Physics labs online
9. Chem and Bio labs in person
10. Study groups – can log in to Bluejeans at any time and collaborate
11. Assessments done by invigilation at the college
12. Given iPads to write on PowerPoints etc
13. Quite prepared for the online shift – except for the lower levels.

≈ 12:00 m. – 1:30 p.m. **Lunch**

- f) Articulation Meetings on Zoom—pros and cons
  - a. Carol
    - i. Against the idea – better to visit in person – personal connection is lost – networking opportunities are reduced
  - b. Robert
    - i. Agrees that advantages to meeting in person are large, especially for members from smaller centers.
  - c. Tony
    - i. Opposite view – we are all still learning online platforms and breakout rooms for networking – it will get better as we get better at it. Feels like pros of Zoom meetings outweigh the cons. Less travel – less time away from home.
  - d. Kate
    - i. Possibly we should consider promoting both options at each meeting. In person but with a Zoom option.
  - e. Marcie
    - i. Prefers in person
  - f. Puja
    - i. Agrees that in person is best
    - ii. People person – so prefers to have the face-to-face option return
  - g. Richard
    - i. Agree with the overall sentiment that face-to-face is more fluid and easier to make connections.

- ii. There are constraints to travelling to the meetings – sometimes weather is an issue to travel.
      - iii. We have all met before and as time goes on we might lose the sense of community.
    - h. Tanya
      - i. If option to do both, worries that institutions might insist we attend online
      - ii. Prefers to meet in person
    - i. Nora
      - i. Convenience to online meetings – no travel – no traffic – split since there are advantages to both methods
    - j. Costa
      - i. We do work that impact education practices.
      - ii. Hard to be as productive over a screen
      - iii. To best serve the students we want to use the best means possible
      - iv. Whichever method feels best, we should adopt
      - v. Pros and cons to both ways
- 9) Comprehensive review of learning outcomes for Intermediate-algebraic
- a) General discussion
- i) Kate – would like a general discussion – possibly Intermediate-algebraic could be exclusively for pre-calc 11 prep – this list has too many pieces that are not used in pre-calc 11
  - ii) Richard – almost all students go through this course – pre-calc stream and foundations stream – most feed into foundations stream – would prefer that this course was not specific to pre-calc stream
  - iii) Carol – her colleagues are split – she would like to keep the measurement unit since that doesn't get taught at the higher levels – this is the one opportunity to teach these topics – ratio and proportion as well
  - iv) Tony – in line with Richard – use this level course to funnel to both Pre-calc 11 and Foundations 11. If changed, then they would need to make another course. Could maybe see losing Perimeter and Volume unit but would like to see it mostly remain the same
  - v) Tanya – overall happy with the course as is
  - vi) Kate – what is in here that you need for foundations that you don't need for algebraic?
  - vii) Tony – would need to hear what would be proposed to change before answering that – intermediate-algebraic course can start with generic topics then move more towards the pre-calc topics – offers course in two parts
  - viii) Kate – foundations and algebraic – not necessarily designed as harder or easier, but preparing for different streams – does see the unit conversions in physics and chemistry
  - ix) Richard – Foundations – covers stats, trig, geometry... noticed that students have success in Math 047 – in Math 048 is where stats and geometry is – find that students are less prepared for the geometry – would prefer to not remove the perimeter, area, and volume unit – the more exposure to unit conversion



the better for any student heading into sciences – Capilano is happy the way the course is.

- x) Tanya – one semester course – like the topics as is. Would rather add topics if anything rather than remove
- xi) Puja – Camosun teaching it in two parts – moves trig to the beginning to separate from Polynomials

**b) Proposed changes**

- i) **Operations with Rational Numbers – 1. B change to “add, subtract, multiply, divide, and simplify rational numbers”**
- ii) **Measurement section Learning Outcome 2. c - add “or US Customary” after the word Imperial “Convert between and within the metric and Imperial (or US customary) measurement systems using tables and/or calculators.”**
- iii) **Measurement section Learning Outcome 2. b – also add “or US Customary” after Imperial**
- iv) **3. c. remove surface area of cones**
- v) **4e. CHANGE "ratios and proportions" TO "ratio and proportion" (reason: parallelism)**
- vi) **4e. change to “use ratios and proportions to solve problems including...”.**
- vii) **5g. Change to “solve simple formulas for a given variable”.**
- viii) **6f. Change to “define slope and relate to grade and pitch”.**
- ix) **6e. and f. switch order**
- x) **Polynomial section LO 8. a - has a closed bracket that shouldn’t be there. Should be removed.**

**c) Motion to accept all changes as above – M/S/C**

End of day 1

**Friday, 5 March 2021**

10) Articulation/re-articulation of math courses and considerations of any possible revisions

*This year is the year for rearticulation of Provincial—Calculus courses.*

a) Intermediate-developmental

- None submitted

b) Intermediate-algebraic

- MAT 033 and MAT 034 (Parts 1 and 2)—NIC - Withdrawn
- MATH 1101—Langara
  - i. Approved by EDCO in February
  - ii. Outcomes copied from articulation guide for outcomes 5-9
  - iii. Math 1100 and 1101 would be equivalent to Intermediate-Algebraic

- iv. However, Math 1100 contains ALF level outcomes, not Intermediate Algebraic
  - v. Missing Measurement, Ratio and Proportion
  - vi. If a link is added to reference the Intermediate-Algebraic then it might cover it?
  - vii. Concern about whether one course that contains all of ALF 3, 4, 5, and 6 as well as the 1-4 of Intermediate Algebraic is reasonable – The ALF level and Intermediate-Algebraic should be separate.
  - viii. Committee decided that there was not enough clarity on learning outcomes covered to approved this outline. 1101 covers the 5-9 learning outcomes; however, the 1100 does not seem to cover LOs 1-4.**
  - ix. Question about numbering system. Are 1000 level courses eligible for ABE funding?
  - x. Camosun College changed a number of their courses in order to be eligible for ABE funding.
  - xi. Not sure if the number is important or the category?
- c) Advanced-algebraic
- None submitted
- d) Advanced-business / technical
- None submitted
- e) Advanced-developmental
- MATH 1150—Langara
    - i. Was brought last year and feedback has been addressed
    - ii. Trigonometry section added
    - iii. Question about pre-requisites – why need to complete Pre-calculus 11 or Foundations of Math 12?
    - iv. Should delete first line of Course Description**
    - v. Needs to add bullet to Learning Outcomes in course outline – Solving Systems of Equations**
    - vi. Needs to add year of articulation handbook as 2020-2021**
    - vii. Motion to recommend approval of LANG Math 1150 based on the above listed changes (iv, v, vi)**
      - 1. M/S/C**
- f) Advanced-foundations
- None submitted
- g) Provincial-algebra and trigonometry
- MAT 060—NIC
    - i. No reference to articulation guide; however, all learning outcomes copied and pasted from guide
    - ii. Motion to recommend approval of NIC Math 060**
      - 1. M/S/C**

- h) Provincial-calculus
    - MATH 013—OC
      - i. Learning Outcomes cut and pasted out of the 2020-2021 articulation guide
      - ii. Has not been approved by OC EDCO yet
      - iii. Need to get final EDCO approved outline submitted before the Steering Committee meeting.
      - iv. **Motion to recommend approval of OC Math 013 pending approval from OC EDCO**
        - 1. M/S/C
- 11) Update on BC Campus math open textbooks—Krista Lambert, BC Campus (15 min.)
- a) BCCampus projects
    - i) Accessibility of open resources; tracking adoption of resources; regional outreach; teaching and learning practices; pivot to online webinars; open homework systems (access codes); Trades, Business, STEM and Health OER, and ABE OER (21 different resources)
    - ii) [open.bccampus.ca](http://open.bccampus.ca)
    - iii) [bit.ly/ABEpathway](http://bit.ly/ABEpathway) (specific to ABE)
  - b) ABE ZTC Project
    - i) Fundamental ALF Math books have all been updated – formatting to be improved in future
    - ii) Key Concepts of Intermediate Level Math has been completed
    - iii) Intermediate Algebra Math – Izabella Mazur – has been completed
    - iv) Advanced Algebra Math – three versions – 1 ready now and 2 still to come
    - v) Advanced Business Technical – hopefully later this year
    - vi) How to Adopt a text
      - Find the book at [bit.ly/ABEpathway](http://bit.ly/ABEpathway)
      - Report adoption to BCCampus
    - vii) Richard – comment – student ordered the colour version which only had a colour cover and the rest of the text was black and white – Krista said that this will be corrected
    - viii) Izabella –
      - ABE homework resources? Krista – only aware of resources within each text – not separate
      - Assessment? BCCampus has no plans to develop assessment resources – funding for ABE has been used up – not sure if this can be a focus in the future
    - ix) Puja – Have corrections happened for the ALF books? Krista – yes, but once new books are published please let BCCampus know if notice any remaining errors – can make changes in PressBooks
    - x) Patrick – Plans for Provincial level texts? Krista – have not developed yet due to limited funding – no plans at this point

- 12) Errors or omissions in current transfer guide to correct
- a) No corrections
- 13) ABEABC Virtual Conference, April 2021—Izabela Mazur (10 min)
- a) April 19-23, 2021
  - b) Zoom sessions
    - i) Indigenization topics
    - ii) Tech tools
    - iii) Power of storytelling
    - iv) Computer security and scams
    - v) Engagement strategies
    - vi) Assessment tools
    - vii) Resilience
    - viii) Etc...
- 14) Whole-group discussion on topics or information items
- a) John Pacheco - Timelines for prerequisites for math courses: What is rationale for how long ago a person has taken a course without need for more testing?
    - i. Carol – C+ within 5-years originally – then changed to B within 3-years for some courses. Even 3 years seems too long. If A or A+ the material tends to come back quickly, but otherwise, it poses challenges
    - ii. Nora – 3-year stale-dating
    - iii. Kate – intake interviews with all students – no official policy about stale-dating – there is a recommendation on the outlines, but individual assessments ultimately determine eligibility.
    - iv. Richard – Interview all students – series of assessment tests – no high school transcript marks at all – instructors all share the load of assessments
    - v. Puja – all students do assessments – ultimately high school grade dictates entry – dedicated faculty to do assessments
- 15) Long-range plans (two to three years into the future)
- a) Recap schedule for rearticulation of courses
    - a. For 2022: review learning outcomes for intermediate-developmental
    - b. For 2022: rearticulation of intermediate-algebraic courses
  - b) Izabella can share experience with OER resources
  - c) Tony – meeting virtually or not? – felt this year went well on Zoom, so would recommend that next year’s meeting is also done virtually or at least have that option
  - d) Izabella – a split meeting would change the nature of the in-person experience. If half the group was online, it would have less benefits for the face-to-face people – would recommend against the split model
  - e) Puja – meeting went well because we mostly know each other – would be more challenging if those relationships weren’t established – would prefer face-to-face
  - f) **Puja – revisit alignment with K-12 learning outcomes next year?**

- g) Tony – happy to have a discussion on VR equipment with anyone.
- h) Robert – Meeting recording storage and availability?
  - a. Will just send link by email to those present at the meeting
  - b. Keep the recording until minutes approved at next meeting
  - c. Could store on KPU Moodle - encrypted
  - d. However, articulation committees might be required to remove folders from Moodle – will look into details
- i) Costa – recommends more breakout room time if meeting on Zoom next year.
- j) Elections for co-chairs/vice-chair of ABE Mathematics Working Group
  - a. **Motion to nominate Robert Ferro and Costa Karavas as co-Chairs and Michael Nelligan as Vice-Chair**
    - i. M/S/C
- k) Next meeting location for 2022 will be decided (this date may be decided by Steering Committee or circumstances related to pandemic)
- l) Renumbering of courses
  - a. NEC—see document “NEC-IABE Courses-Code Change Document”
  - b. **ACTION – Robert and Costa - Many course number changes for NEC need to be updated in the articulation guide**
- m) Articulation spreadsheet
  - a. Useful document - on the Moodle site
  - b. Articulated Courses List 2020 06.pdf
  - c. Includes year articulated
- n) Adjournment 12:25
  - a. **Motion to adjourn**
    - i. M/S/C