

2023 ABE Mathematics Working Committee Meeting Minutes

BRITISH COLUMBIA COUNCIL ON ADMISSIONS AND TRANSFER (BCCAT)
Thursday/Friday, 2 and 3 March 2023
Melville Centre—Conference Room #2550A
Kwantlen Polytechnic University, Richmond Campus
8771 Lansdowne Road, Richmond, B.C.

Zoom Link:

NOTE: All times are in PST

Co-Chairs: Robert Ferro, Yukon University
 Costa Karavas, Vancouver Community College
 Vice-Chair: Puja Gupta, Camosun College

In Attendance :

| | | | |
|--|---------------|-----------------------------|---|
| British Columbia Institute of Technology | BCIT | Winona Cordua-von Specht | wordua@bcit.ca |
| Camosun College | CC | Puja Gupta Zahra Khimji | guptap@camosun.ca khimjiz@camosun.ca |
| Capilano University | CAPU | Richard Brand | thomasb@capilanou.ca |
| Coast Mountain College | CMTN | No Representative present | |
| College of New Caledonia | CNC | Vida Robillard | robillardv@cnc.bc.ca |
| College of the Rockies | COTR | Allison Platt | aplatt@cotr.bc.ca |
| Douglas College | DC | Florica Alexandru | alexandruf@douglascollege.ca |
| Kwantlen Polytechnic University | KPU | Tanya Boboricken | tanya.boboricken@kpu.ca |
| Langara College | LC | Nora Franzova | nfranzov@langara.ca |
| Nicola Valley Institute of Technology | NVIT | No Representative present | |
| North Island College | NIC | Nadine Simpson | nadine.simpson@nic.bc.ca |
| Northern Lights College | NLC | Marcie Lundin | mlundin@nlc.bc.ca |
| Okanagan College | OC | Mike Rutten | mrutten@okanagan.bc.ca |
| Selkirk College | SC | Karen Shoniker | kshoniker@selkirk.ca |
| Thompson Rivers University | TRU TRU-OL | Izabela Mazur Derek Knox | imazur@tru.ca dknox@tru.ca |

| | | | |
|---------------------------------|-----|-------------------------------|-----------------------------------|
| University of the Fraser Valley | UFV | Judy Larsen (Day2) | judy.larsen@ufv.ca |
| Vancouver Community College | VCC | Costa Karavas Manav Bhanot | ckaravas@vcc.ca mbhanot@vcc.ca |
| Vancouver Island University | VIU | Linda Neilson | linda.neilson@viu.ca |
| Yukon University | YU | Robert Ferro | rferro@yukonu.ca |
| Native Education College | NEC | Fouzia Qasim (Day1) | fqasim@necvancouver.org |

Note: [Link for Mathematics Working Committee Files](#)

Thursday, 2 March 2023

1. Opening remarks and introductions
 - a) Welcome – Thank you, Costa
 - b) Introductions
2. Approval of Agenda
 - a) Proposal of amending the agenda to stay until 3:30 pm instead of 3pm
 - b) Agenda amendment – M/S/C
3. Review Purpose of Meeting

To ensure all students have access to quality courses and are able to transfer between different educational organizations in BC, to review learning outcomes, and to encourage exchange and development of curriculum materials.
4. Approval of minutes of 3-4 March 2022, online meeting by Zoom ([Download Minutes](#))
M/S/C
5. Action items resulting from minutes of 2022 meeting
 - a) Action item on page 8 of 9: BCCAT does not make the grid anymore but have a new online system. Mike Winsemann to address this question during the joint meeting.
6. Updating members list and transfer guide
 - a) Members list -done
7. Reports/Updates (Reports should be submitted electronically to members before the meeting dates.)
 - a) BCCUPMS report—Costa Karavas

1. BCCAT-Mike Winsemann (Director, Transfer & Technology) (In person)
Highlights of the presentation were:

- BCCAT's mandate which is to encourage institutions to develop policies and practices regarding the transferability of post-secondary credit and to facilitate the development of credit transfer arrangements through oversight of articulation committees.

- Most meetings continue to be held online, with 1/3 opting for F2F or hybrid
- Return to travel has raised questions about who pays for travel
- Position of both AEST and BCCAT that the cost for travel to attend articulation committee meetings is built into the base operating funds of the institution.

- BC Transfer Guide Updates include expansions:

- o Over 70,000 non-BC and International Equivalencies added
- o Adult Basic Education Search Interface
- o English as Additional Language Search Interface
- o Re-design of the BC Transfer Guide

- Major Q1 release will see the creation of a departmental interface for faculty evaluators. This will provide insight into performance, pending requests, and agreements that are overdue for review.

- Research Updates include:

Reverse Transfer

<https://www.bccat.ca/pubs/Reports/ReverseTransfer2022.pdf>

Covid-19 and Transfer

<https://www.bccat.ca/pubs/reports/CovidandTransfer2021.pdf>

Pathway Partnerships with Indigenous Post-Secondary Institutions

<https://www.bccat.ca/pubs/reports/PathwaysPartnerships2021.pdf>

Exploring Students' Motivations for Credit Accumulation

<https://www.bccat.ca/pubs/reports/StudentMotivations2021.pdf>

2. BCcampus – Clint Lalonde, Project Manager, Open Homework Systems (OHS) (online)

Main highlights from Clint Lalonde's presentation

- OHS Goals and Deliverables

- Replace high use, high-cost commercial homework systems used within the BC post-secondary system with open-source alternatives.
- Develop discipline champions and communities who can further steward the opensource options once the project ends
- Inform and educate system about financial costs of homework systems on students.

- WebWork is a mainstream OHS for STEM courses and H5P for non-STEM courses.

- Two WebWork institutional grants were awarded to Vancouver Community College

and Thompson River University.

- Additional STEM Projects

- Organic Chemistry Workbook of 240 questions using ChemSketch (OSS) Resources

(VIU)

- Set of 90 WebWork questions (BCIT)

- Set of PrairieLearn questions to align with open book UBC mat textbooks CLP-1 and CLP-2 (UBC)

- Set of PrairieLearn questions to support physics curriculum (UBC-O)

- H5P projects from various institutions.

- 30 million dollars in student savings, 5860 open textbook adoptions, 200 open

textbook projects. 396 open textbooks; 172 in Math & Stats.

3. Reports from PIMS, ABE MATH Articulation, Changing the Culture

4. Keynote Address

Leo Neufeld and David Leeming gave a comprehensive presentation of the historical evolution of the BCCUPMS committee in tribute to the 100th annual meeting. Reference to past members and committee issues were presented, and the important work the committee has and is currently doing with respect to articulation and student mobility.

5. Discussion on Open textbooks, online HW systems and Online Final Exam

b) Joint Annual Meeting of Institutional Contact Persons (ICPs), Chairs, and System Liaison Persons (SLPs)—was partly open to all committee members – [detailed report on the Moodle site](#)

c) Other

8. Textbook and hours list (2019 draft) Is there a need to update? **Action #1** Costa will email a shared excel file created by Toni where we can all update the materials used.

9. Advanced Foundations course questions—how many hours? Textbook? Are articulated outcomes current?

[It was decided that anyone who would like to work on Advanced Foundations 11 and 12 should connect with Alison Platt and Izabela Mazur respectively.](#)

10. Comprehensive review of learning outcomes for Advanced Algebraic ([Download List of Learning Outcomes](#))

Changes:

1. b) simplify algebraic expressions using rules of order of operations including **nested parentheses**, and properties of exponents

~~*remove e) simplify algebraic expressions with nested parentheses~~

2.
 - b) ~~manipulate solve~~ simple formulas to isolate a ~~given~~ **specified** variable
 - f) find the union (disjunction) and intersection (conjunction) of sets
 - g) solve and graph compound inequalities

3. #3 remove commas from the title
 - b) graph linear equations ~~and non-linear equations~~ **using a table of values**

Make m) optional
4.
 - b) determine if a system of **linear** equations will have **one, infinite or no solution(s)**
 - c) use systems of **linear** equations to solve applied problems

Optional Outcomes: d) solve systems of **linear** equations in three variables and applied problems using such systems e) graph the solution for a system of linear inequalities in two variables f) use a graphing calculator or other appropriate technology to solve systems of **linear** equations and inequalities
5. change the title to: **Polynomial Expressions, Equations and Functions**
 - a) ~~determine~~ identify the degree, terms and coefficients of a polynomial
 - e) factor polynomials using an appropriate strategy or a combination of techniques: common factors, difference of squares, difference and sum of cubes, perfect square trinomials, trial/error, ~~or~~ **and** grouping

Optional Outcomes:

 - h) divide polynomials ~~and by~~ binomials using long division
 - i) divide polynomials ~~and by~~ binomials using synthetic division

6. Variation, Rational Expressions and ~~Rational Equations and Variation~~
 - d) solve rational equations ~~and check~~
 - e) **manipulate solve** formulas involving rational expressions **to isolate a given specified** variable
 - g) simplify complex ~~fractions~~ **rational expressions**

7. Radical Expressions and Equations
 - e) rationalize denominators ~~in fractional expressions~~ containing radicals (including the use of conjugates)
 - g) ~~solve~~ **manipulate** formulas involving powers and square roots ~~for~~ to isolate a **given specified** variable

10. Optional topics B. Data Analysis
 - d) design and conduct **a** statistics project, analyze the data, and communicate the outcomes

Break: from 12:03 to 1:30

Joint meeting from 1:30 to 2:30

Back at 2:45

11. **1:30 pm-2:30 pm Combined Meeting of Articulation Committees** Conference Room #2550A (in-person and virtually)—Computer Studies, English, First Peoples, Math
 - a) BCCAT Annual Update—Mike Winsemann, Director, Transfer and Technology, BCCAT.- **talked about the importance of keeping the grid up-to-date among other things**
 - b) ABE Articulation Steering Committee Update—Shantel Ivits, Co-chair, ABEASC
 - c) Other possible topics for all groups to discuss
12. Review what is to be accomplished in next day's agenda
13. Meeting adjourned at 3:45pm.

Friday, 3 March 2023

Meeting begins at 9:00 a.m.

1. Business arising from previous day and/or continuation of items not finished in previous day such as articulation/re-articulation of courses

14. Articulation/re-articulation of math courses and considerations of any possible revisions

NOTE: If you will be presenting a new math course for articulation, please send an electronic copy for distribution. [This agenda item may need to be continued next day.]

*This year is the year for rearticulation of **Intermediate Developmental** courses. ([Download of Learning Outcomes for Intermediate Algebraic](#))*

a) Intermediate-developmental

- OC—MATH 070 – (M/S/C)
- SELK—MATH 46 – pending approval (PA) with change of year to 2022-2023 by April 20, 2023 – (M/S/PA)
- VIU—MATH 030 – return after: remove the page number from the handbook link; separating #3 b) and #3 c) – (M/S/PA)

b) Intermediate-algebraic

- CNC—MATH 030 – (M/S/C)
- KPU—MATQ 1089 – (M/S/C)
- SELK—MATH 49 – pending approval (PA), update the date of link to the guide – (M/S/PA)
- TRU—MATH 0400 & 0410 (parts 1 and 2) – (M/S/C)
- TRU-OL—MATH 0401 – pending approval (PA), update the date of link to the guide to 2021-2022 – (M/S/PA)
- VIU—MATH 037 – (M/S/C)

c) Advanced-algebraic

- TRU—MATH 0510 – (M/S/C)
- d) Advanced-business / technical
- CNC—MATH 042 – pending approval (PA), make the link to handbook a hyperlink– (M/S/PA)
 - TRU—MATH 0550 – (M/S/C)
- e) Advanced-developmental
- None submitted
- f) Advanced-foundations
- TRU—MATH 0520 – (M/S/C)
- g) Provincial-algebra and trigonometry
- TRU—MATH 0600 and 0610 (parts 1 and 2) – (M/S/C)
 - TRU—MATH 0630 – (M/S/C)
- h) Provincial-calculus
- None submitted
- i) Any course deletions from the grid?

2. Errors or omissions in current transfer guide to correct

None

3. Whole-group discussion on topics or information items (as topics arise throughout meeting or use for extra time for topics not yet finished)

Suggested topics (This is a tentative list and topics can be added or deleted as the group sees fit.):

- a. ABEABC Conference—Izabela
ABEABC is to be held on April 28th @ Harrison Hot Springs resort
- b. Anyone using WCLN or studyforge or Aleks for online courses—Trudy
Discussion about various options: WebWorks is good for UT courses, Aleks seems to be a good tool for Upgrading level courses as homework system mostly but students are expected to pay (\$89-\$100 per term, covered by AUG, if eligible) for it.
- c. ALM conference – Judy Larsen. Discussed the option of having the next one in Vancouver, BC. Decision to plan for 2025 ALM instead of 2024. Anyone interested in helping Judy in this endeavor contact her directly:
judy.larsen@ufv.ca
- d. Sharing of resources—texts, modules, OER, etc – an update from the subcommittee: share ideas, resources, achievements and frustrations. Planning to continue to pursue funding from BCCampus to create and support OER materials.

4. Long-range plans (two to three years into the future)
 - a) Any items that need to be reviewed
 - b) Recap schedule for rearticulation of courses
 - a. For 2024: review learning outcomes for advanced developmental
 - b. For 2024: rearticulation of advanced algebraic courses

The schedule is available on Moodle site as a pdf: [Rearticulation Schedule by Year \(2015-2030\).pdf](#)
 - c) Possible training events or professional development opportunities for future meetings
focus on indigenizing math curriculum
5. Elections for co-chairs/vice-chair of ABE Mathematics Working Group
Motion to nominate Robert Ferro and Costa Karavas as co-Chairs and Puja Gupta as Vice-Chair - (M/S/C)
6. Selection of next meeting location for 2024 (this date may be decided by Steering Committee)
March 7&8, 2024 hybrid at CAPU (Thank you, Richard!) The Steering Committee might be the one gives more direction in this case. Robert and Costa will update the committee members.
7. Summary of new business, next year's items, and wrap-up
 - i) articulated 17 courses
 - ii) got to hear from BCCAT
 - iii) revamped the Advanced Algebraic learning outcomes.
8. Adjournment 12:02 p.m. – M/S/C

Other ACTION Items: The chairs will bring the following to steering committee:

- 1) Handbook suggestions:
 - a) Find a way to add last modified/updated date for learning outcomes so that every year the latest ABE guide reflects when a course was updated eliminating the need to specify and link to the accurate of ABE handbook in institution documents. Committee suggestion:
Right after the course title have in parenthesis the year the learning outcomes were last modified. E.g., MATHEMATICS: ADVANCED LEVEL – ALGEBRAIC (2023-2024)
 - b) Clarify the language for link to handbook in outlines; proposed link:
<https://www.bctransferguide.ca/transfer-options/adult-basic-education/past-abe-guides>
- 2) Updating grid: What is the current process of adding and removing the courses on the grid?