

2017 CHEMISTRY ARTICULATION MEETING
University of the Fraser Valley, Room D213
Friday, May 5, 2017; 9:00 am – 4:00 pm

Institution	Name	Institution	Name
In attendance:			
Alexander College	Patrick Duffy	Simon Fraser University	Evon Khor
BC Institute of Technology	Jimmy Lowe	Thompson Rivers University	Bruno Cinel
Camosun College	Neil Meanwell	Trinity Western University	Paul Brown
Capilano University	Urmila Deo Jangra	Selkirk College	Jason DaCosta
College of New Caledonia	Kara Crosina	University of BC -Vancouver	Jose Rodriguez Nunez
College of the Rockies	David Dick	University of Northern BC	Todd Whitcombe
Columbia College	Taraneh Lajevardi	University of the Fraser Valley	David Fenske (Host)
Coquitlam College	Brenda Louie	University of the Fraser Valley	Myra Hughes (Recorder)
Douglas College	Paul O'Connor	University of Victoria	Sandy Briggs
Kwantlen Polytechnic University	Suzanne Pearce	Vancouver Community College	Judith Wallace
Langara College	Todd Stuckless	Vancouver Community College	Kobra Khazaei
North Island College	Sherrie Wang	Vancouver Island University	Duane Friesen
Northwest Community College	Dave Allen	Vancouver Island University	Jessie Key
Okanagan College	Jasmine Korcok	Yukon College	Ernie Prokopchuk (Meeting Chair)
Selkirk College	Jason DaCosta		
Guests:			
BCCAT	John FitzGibbon	Min. of Ed. Sc. Curriculum	Barb McKinley
Regrets:			
Coquitlam College	Amanda Gronotte	Langara	Margaret Heldman
Columbia College	Brenda Louie	Northern Lights	Cindy Broberg
Langara	Patricia Aroca-Oullette	University of BC, Okanagan	Tamara Freeman

MINUTES

1. Guests and Introductions – David Fenske, UFV Chemistry Department Head

David Fenske welcomed everyone and introduced Dr. Lucy Lee, Dean, UFV Faculty of Science to the group. Dr. Lee opened the meeting with a traditional Sto:lo acknowledgement.

Other guests introduced were:

- John FitzGibbon, Director, Transfer and Articulation, BCCAT
- Barb McKinley, Rep., Ministry of Education, Science Curriculum Committee

Round table introductions were made.

John Wiley & Sons Canada, Ltd. Publisher was acknowledged for their contribution towards the refreshments*

2. Agenda and Minutes – Ernie Prokopchuk, Yukon College

2.1 Adoption of the Agenda

Additions:

5.3 Engineering Chemistry – Todd

7.3 Next Chair, Next Year's Host

MOTION: To adopt the agenda as amended.

,Duffy/OConnor/Carried.

2.2 Approval of the 2016 Minutes

MOTION: To approve the minutes as presented.

Motion approved by consensus.

2.3 Business arising from the Minutes

Flexible Chemistry Pre-major – Since the last meeting, Suzanne and Patricia have not gone any further in their investigation. John FitzGibbon mentioned there is approximately \$15,000 available for a faculty release. This will be taken back to the department in September.

3. BCCAT updates - John FitzGibbon

- The BC CAT Spring 2017 update was circulated to everyone and discussed.
<http://www.bccat.ca/Media/Default/pubs/2017%20Spring%20Update%20Newsletter.pdf?t=636298359115345752>
 - Topics included:
 - Transfer and Articulation Related Activities
 - The articulation section of the website has undergone a major refresh.
 - Transfer Innovations Projects
 - Several colleges are members of both BC and Alberta articulation groups.
 - Flexible pre-major idea – should there be a major pathway?
 - Students may have concerns about which post-secondary to attend, as prerequisites can be different at different institutions and this can be an issue.
 - We need to prepare students for a variety of possibilities

Action: Do a feasibility study first.

 - Engineering first year common core
 - This review covers options and feasibility; see Engineering webpage: bccat.ca/pubs/engineering-final-report-v121
 - Tourism/ Hospitality Community and School Support
 - Community & School Support (CASS) Matrix
 - Recent Publications
 - Impact of Secondary Education Reform on PSE
 - Applicant Data in Centralized Application Agencies and the Implications for BC
 - Dual Admission Agreements
 - What is Academic Credit?
 - Experiential Education
 - Instructors are not always clear on what is meant by experiential education (work integrated learning). eg. Co-op education.
 - UVIC has a definition that is much broader including research, study tours, and out-of-the classroom activities.
 - Ongoing Projects of Interest
 - Field Schools - although not in Chemistry
 - Interdisciplinary Course and Program Transfer
 - Internationalization
 - Indigenization
 - Gender Declaration
 - Dual Credit
 - Marketing and Communication
 - BCCAT “ENGAGE” Updates
 - Ad Campaign
 - Education and Career Fairs
- John reviewed the BCCAT website - <http://www.bccat.ca/articulation/arts/chemistry> making note of the information that can be found, such as
 - Chair – Suzanne Pearce, KPU
 - System Liaison Person – Margaret Heldman
 - Previous Articulation Meeting Minutes (which become a public record)

- Terms of reference
- How to articulate
- Other provinces are beginning to form committees, and have looked at BC
- Many resources are available for running committees, including information on how to articulate
- BC has a history of understanding that student transfer is a right, and that it is important.
- BCCAT provides administrative oversight of articulation committees but is not a legal entity and has no policy oversight
- BCCAT has engaged the Ministry of Education much more so than in the past
- In conclusion, all were encouraged to review the RESEARCH section of the website which provides an overview of BCCAT's Research Plan, Admissions processes, etc.

4. High School Science Curriculum updates – Barb McKinley

Attachment 4.0

- A PowerPoint presentation is attached.

Highlights:

- The new Chemistry 10-12 draft curriculum is available online; comparing existing IRPs and the new curriculum; more content and skill development; Check out the website: <https://curriculum.gov.bc.ca/curriculum/10-12>
- The curriculum is ready for optional use in classrooms for the 2016/17 and 2017/18 school years.
- Feedback continues for these new flexible, modular course(s)
- There will be more skill development, more clearly delineated
- Chem 11 - 4 core areas (Atoms and Molecules, The Mole, Chemical Reactions, Solution Chemistry), 1 choice area (Organic), and 31 learning standards that are under skills development. The same areas are the same in all sciences.
- Questions were raised about how the prescribed core areas allows for increased flexibility, and whether stoichiometry and calculations are covered adequately?
- Feedback themes/comments:
 - People want more support on aboriginal themes, more focus on the scientific method, less ambiguity on depth of coverage
 - Science 10 has too much biology and not enough ecology and physics.
 - Phase out radioactivity
 - Chem 11 feedback
 - Is there too much solution chemistry?
 - Optional modules are a problem to some – make all learning outcomes optional?
 - Chem 12 feedback
 - Should kinetics be moved to grade 11?
 - We need feedback on balance of topics
 - Possible future articulation meetings could include roundtable discussions on these more serious matters
 - What about putting Organic Chemistry in Grade 12?
- Further feedback is requested. Email Barb at barbaramckinley@shaw.ca

5. Discussion Items

5.1 Use of Technology in First Year Courses – David Fenske

- Recently the department held a Top Hat textbook presentation
- This year the department will go away from the Petrucci textbook
- With TopHat, you can add your own content.
- Initial cost: \$60 per year per student (added in proof: the \$60 is for lifetime access to the text; there are additional course enrollment fees).
- TopHat can be used for in-class polling, where students could use their phones as “clickers,” as well as to obtain course content.

- UFV has an in-house lab manual which can be put on-line. We can sell it to students rather than have them buy a paper copy at the bookstore.
- TopHat provides lifetime access to the e-book; has electronic homework; lecture notes; and students get instructor changes to notes immediately.
- Will try this new option for one year.

5.2 Standard pressure (first year courses) – Jasmine Korcok

- What is the definition of Standard temperature and pressure (STP) = 1 bar
- Gas laws - Canadian edition use 1 bar

5.3 Engineering Chemistry Curriculum – Todd Stuckless

- This requires extra time and credit.
- Capilano offers it with a competitive entry; this works out well for better students
- Important to the Physics program – Physics for Engineers vs Physics for Scientists
- UBC-O has a two semester course

6. Reports

Attachment 6.1 and 6.2

Full reports are included in the attachment. Below are the highlights:

Alexander College – Patrick Duffy

- Greening up the organic lab - less toxic to the environment

BCIT – Jimmy Low

- BCIT will host a summit in June with a focus on the upcoming K-12 curriculum

Camosun College – Neil Meanwell

- Applied Chemistry and Biotechnology Program had another strong enrolment
- New Health Building will give Chemistry more space

Capilano University – Urmila Deo Jangra

- Offer Organic Chemistry for Engineering
- Q Is there a placement test for students?
- Lab exemptions have been eliminated for repeating students; students must repeat both lab and lecture

College of New Caledonia – Kara Crosina

- Distance delivery is new; Lectures were delivered through video conference to the Quesnel campus. The lab portion was taught by an on-site instructor.
- Dental Hygiene is back in the fall; all students required to take first year

College of the Rockies – David Dick

- Did not use a textbook for CHEM 100
- CHEM 115 - Chemistry for Engineers – saw a fair bit of attrition; students now take both semesters of Chemistry

Columbia College – Taraneh Lajevardi

- Reduced lab enrolment max from 24 to 18
- Dr. Meshgini has been there over 50 years and plans to retire soon
- Adding Science 10 to their program
- Courses run 6 days a week – day and evening courses
- Moving to electronic textbooks

Coquitlam College – Brenda Louie (sent regrets)

- See attached

Douglas College - Paul O'Connor

- Chemistry of Cooking is very popular
- Organic I and II are being offered

Kwantlen Polytechnic University – Suzanne Pearce

- Large scale renovation of the Spruce Building on Surrey Campus
- Richmond Campus is also home to a private high school – Maple Leaf Education System – and they will be using the lab space under a three year agreement

Langara College – Todd Stuckless

- Domestic enrolment down a bit; international up to almost 50% in some classes
- Two new courses are being offered – CHEM 2100 Science Projects and SCIE 1114

North Island College– Sherry Wang

- There were complaints from students are about the high cost of the textbook bundle (approx. \$376)
- Engineering Chemistry was very popular with a waitlist

Suggestions provided:

- Custom publishing – soft cover text and loose leaf – check with other institutes to see what they do
- Use supplements; eg. Tro had a pretty good Quantum Mechanics section
- Hampton 11 has a really good nomenclature section
- Try the free and online textbook
- Try custom textbooks and notebooks
- Try looseleaf chapters that students can sell back
- Try to get a better deal buying with another institution

Northern Lights College - Cindy Broberg

- No rep. in attendance, report attached.

Northwest Community College – Dave Allen

- New course – CHEM 111 – Fundamentals of Chemistry I
- Developed CHEM 190 - Chemistry of Brewing –planning to run in Summer 2018
- College is anticipating a new name and rebranding
- Q Does anyone have any ideas as to how to create a great tutorial space?

Okanagan College

- Hiring a part-time CHEM/Bio lab tech for the first time.
- Some International students were missing prerequisites; namely Math 11 and 12
- Plagiarism and cheating were an issue this year.

Selkirk College – Jason DaCosta

- 1st year enrolment has been high in the fall
- Lab renovations are complete
- New part-time lab instructor hired

Simon Fraser University – Evon Khor

- Chemistry enrolments down slightly
- CHEM 449 Special Topics in Material Chemistry will be team taught as modules within a 3 unit course; to be offered in the fall for the first time

Thompson Rivers University – Bruno Cinel

- Encouraged faculty to attend the College Chemistry Canada (C3) Annual Conference at the University of Toronto on May 26-28, 2017

- Topic: Beyond Diversity: Inclusiveness in Chemistry Education

Trinity Western University – Paul Brown

- CHEM 111/112 – pre-requisite is Chem 12; all other students must take CHEM 103/104 to get them up to speed
- Everyone takes a Math placement test

University of BC – Jose Rodriquez Nunez

- Articulation agreements involving CHEM 113, 201 and 202 will be awarded CHEM 1st and CHEM 2nd respectively; send Bruno an email if you need more information.
- Several Articulation agreements will be cancelled this summer. See report Appendix – Table A1 for details.
- CHEM 123 will be creating and implementing an in-house E-book

University of the Fraser Valley – David Fenske

- The Chemistry department no longer offers CHEM 083 (Gr. 11 equivalent) as this has been given to the University Upgrading and Planning department to handle.
- First year courses continue to be offered at the Chilliwack campus.
- Received approval to purchase a new benchtop NMR.
- Major lab renovations will be completed this summer to provide more space for student research.

University of Northern BC – Todd Whitcombe

- Enrolments stable; increase in first term of 2nd year enrolments
- Staffing and institutional changes occurred

University of Victoria – Sandy Briggs

- Major Program in Chemistry for the Medical Sciences is very popular
- Sandy is retiring at the end of the year

Vancouver Community College – Judith Wallace

- Revised Curriculum for CHEM 1 and 2 came into effect in Sept. 2016
- Developing Associate Degrees in Science and Humanities and could start in Sept. 2018.
- Currently designing a 2nd year organic course that could be running as early as Sept. 2019
- Judith will send out an email to everyone with a questionnaire. (see attached)

Vancouver Island University – Duane Friesen

- A new Health and Science Building is being built which will expand the Chemistry program
- They are hoping to offer a Chemistry Major soon.
- Intend to switch to an open textbook based on OpenStax Chemistry for 2017-18
- Jessie Key can give you more information on OpenStax. Email: Jessie.key@viu.ca

Yukon College – Ernie Prokopchuk

- Enrolments dropped if students did not have the proper math skills.
- No textbooks were used this term; instead each week links to the Libretext modules were posted; traditional textbooks were on reserve in the library
- Q What to do about students being late?
- Suggestion: Do an oral quiz/test – students must be prepared

7. New Business

7.1 Developing Communal Resources

- Contact Suzanne Pearce at Kwantlen if you are interested in receiving emails about Learning modules; learning resources for in-class; case studies, etc.

7.2 Location of the Meeting Next Year

- The 2018 meeting will be held at UBC Okanagan (Steve/Tamara)
- The 2019 meeting will tentatively be held at Langara; location to be confirmed.

7.3 Articulation Chair Position

- Suzanne Pearce from Kwantlen will not be able to take on the duties of Articulation Chair Elect due to her other commitments.
- **Todd Whitcombe** from UNBC has agreed to be the new Articulation Chair for the next two years.
- Typical duties include: being the Chemistry contact person; advising; disseminating information; gathering reports; attending joint annual meeting; updating the membership list and sending reminders.

7.4 Closing Comments

- Thanks to UFV and David Fenske for hosting the event.
- Thanks to Myra Hughes, UFV Chemistry Department Assistant, as the recorder.
- Thank you to Ernie Prokopchuk (Yukon) for chairing the meeting.

Motion to adjourn at 2:40 p.m.

Duffy/Pearce/Carried.

*A note of thanks to both Wiley Publishing and Pearson Education for making a financial contribution for the refreshments.

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