BC Electrical Instructors Articulation Committee

Hosted Online by British Columbia Institute of Technology

May 27, 2021 Meeting Minutes

Attendees

Attendee	Institution	Attendee	Institution
Andy Amboe	Northern Lights College	Mike Mann	Kwantlen Polytechnic University
Myles Andrew	University of the Fraser Valley	Dave Murdoch	College of the Rockies
Dave Briggeman	Selkirk College	Eric Nordman	Camosun College
Cary Britton	University of the Fraser Valley	Trevor Petr	North Island College
Clarence Burlock	BC Institute of Technology	Peter Poeschek	Thompson Rivers University
Roger Cannon	Kwantlen Polytechnic University	Baldev Pooni	System Liaison Person
Nathan Chapin	BC Institute of Technology (Co-Chair) (Virtual Host)	Jason Schapansky	Thompson Rivers University
Jason Dabner	Thompson Rivers University	Amie Schellenberg	Thompson Rivers University
Shane Dalager	Vancouver Island University	Ted Simmons	BC Institute of Technology
Carmen deGoey	Camosun College	Cameron Thiessen	Coast Mountain College
Stephen Dockery	Kwantlen Polytechnic University	Mike Turley	Thompson Rivers University
Joel Feenstra	University of the Fraser Valley	Orlando Wall	Kwantlen Polytechnic University
Mike Finch	Thompson Rivers University	Jeremiah Williamson	Okanagan College (Chair)
David Johns	North Island College	Ron Murray	Kwantlen Polytechnic University
Todd Leskie	Okanagan College	AJ Wearmouth	Selkirk College
John MacMillan	College of New Caledonia		

Guests

Mike Winsemann	BCCAT
Ark Tsisserev	AES Engineering
Kaila Joynes	AES Engineering

Regrets

Charles Davis	BC Institute of Technology	Kwantlen Polytechnic University	KPU
Daniel Smythe	University of the Fraser Valley	Mike Dwojak	Northern Lights College
David Wright	Kwantlen Polytechnic University		
Kevin Szol	College of the Rockies		

May 2021 Electrical Articulation

Item	Discussion
1. Call to Order	Meeting called to order at 8:08 am by Jeremiah Williamson. A thank you to everyone for coming. Housekeeping items were discussed. Meeting minutes will be automatically adopted after minutes are sent out and one month passes with no corrections. A heads up that the Institutional Reports and the ITA Report were sent out late yesterday evening. Reminder when voting on motions that only one vote per Institution is allowed. **Motion 1** moved by Ted Simmons *to accept the agenda as presented.* Seconded by Cary Britton. **Motion carried**.
2. Territorial Acknowledgement of Institutions in digital format	On behalf of Carmen deGoey, Nathan Chapin shared his screen showing artwork by Christi Belcourt. "To honor, respect and acknowledge relationships with First Nations and Indigenous peoples of our Province. We collectively acknowledge their welcome and graciousness." Image included territorial acknowledgements from each institution.
3. Institution Reports	Please see attached reports from the following institutions: BC Institute of Technology North Island College Coast Mountain College Selkirk College University of the Fraser Valley Kwantlen Polytechnic University College of New Caledonia College of the Rockies Vancouver Island University Northern Lights College Thompson Rivers University Camosun College Okanagan College

Item	Discussion
4. Level 1-3 SLE Implementation September 2021	Jeremiah mentioned that an email from the ITA identified a SLE implementation date of 2021-09-01. Standard Level Exams need to be updated to reflect the current program outline. This requires that the level 2 & 3 exams be updated. Before Covid, the results from the Level 2 SLE exam were very poor. There was not enough pilot tests done to gather enough data to provide accurate analysis of the results, which is compounded by the fact that students who wrote the pilot exams were given less time to complete them than the actual time limit. ITA is looking for writers for the SLEs in July through BCATTA to align Level 2 exams. Classes starting after Sept 1 2021 will be required to write a SLE. Classes that start before September 1st 2021 are not required to write a SLE. A question that wasn't addressed in the letter regarding SLEs: "What are they doing for students who don't have an index in their codebook?". There is a new index published online in a PDF now, but are the students going to have that in the Student Level Exam when they write? Nathan mentioned that they are going to follow this up with the ITA on whether the 2018 code or 2021 code is relevant for SLE's and other questions that come up during this meeting. Baldev gave an update on the letter that Level 2 alignment is required. Baldev will submit names after the meeting. The alignment is 2 half days in July, anyone interested should let their Dean know to contact Baldev. Q: Are they going to do the SLE 3 after September? A: Not mentioned in the letter, Level 3 still needs to be updated. Q: As a group are we now in support of SLE's? Discussion around that question as most seem to be opposed for various reasons and concerns. Nathan made a suggestion to forward a motion. **Motion 2 put forward by Roger Cannon** **Be it moved that all Electrical Standard Level Exams not be implemented until all exams are updated to reflect both the most current version of the ITA Construction and Industrial Electrician program outlines and to the 2018 and 2021 Canadian Electrical Code.** **-**Seconded by Dave Briggeman Discussion around the motion. Q: Will BCATTA get a copy of these motions or is there an advantage for us to let them know that we are not particularly thrilled with the way SLEs are being implemented? A: Baldev as SLP will read through the minutes and bring an update to the Dean's group and at the meeting June 11th. **M otion carried (12 in favour, 1 abstention)**

Item	Discussion
5. Curriculum Sub-Committee Update	<u>Level 4 Resource Development</u> Nathan Chapin prepared a short report, which is attached below. Question: Can you repeat the possibility of the contracts being released and the timeline? Answer: Once the RFQ (Request for Qualification) is released and as soon as people can apply and are approved by the Curriculum Subcommittee, writing can begin. The ideal timeline is to get it done by the end of the year, however it is more likely that the work will continue until the end of ITAs fiscal year in March. The scope of the project is quite large, anyone interested in writing or reviewing should apply as soon as the RFQ is released. The RFQ should also be forwarded to all instructional staff in each department. Jeremiah added that the ITA is not entertaining any changes to the current binders until after the complete project is done. That means that the same errors, omissions and learning guides that were never completed for level 1-3 will not be addressed until the Level 4 project is complete. Until all the work is done on level 4, students will have to buy the binders and buy R6 & R7 independently. DC machines is also available as an independent purchase from Queen's Printer. The ITA appears to be operating as a publisher, they control the allocation money, the Curriculum Subcommittee is enlisted to identify and carry out the writing, Open School BC manages the project for the ITA. Then Queen's Printer is enlisted to brokerage the printing. This process is convoluted, time consuming, and costly. Q: What is the ratio of management with this project vs. what gets done? A: No exact numbers but editing for R6 & R7 was done for free. Payment to authors was approximately $8,000. Open School BC's project management fee was approximately $40,000. Q: Where are we at with separating the sections in the binders? A: The binder on the BC Trades Module website is currently one big PDF. It is Nathan's understanding that in Phase 2, Open School BC will separate it out into the individual line items it once was. Frustration was voiced in regard to the progress being made with the binders and starting all over, but Jeremiah added that they have made some good progress since the last Articulation meeting. Andy Amboe thanks Nathan and the sub-committee for being actively involved. Pro-active involvement of the group is important to make improvements for Electrical students across the province. Jeremiah thanked the committee for meeting once a month, thus improving communication. Please reach out to the members if you don't receive the communication. Carmen deGoey thanked Nathan and Jeremiah for great leadership and everyone else on the committee for their hard work. Calls out to everyone to help author new material for the sake of the students. Nathan asked if the terms of reference from the Articulation group "one person per public institution" need to be revisited as one instructor from NIC on the Curriculum Sub-Committee took a job for a private trainer mid-year and had requested to stay on the committee. Nathan asked if after this meeting the Chair or Head Instructor from each school could send him that school's representation to the Curriculum Sub-Committee. Everything is on a one-year rotational basis, so they can follow that up for the next meeting on June 16th and continue what they are doing.

Item	Discussion
6. Private Trainers	Discussion regarding membership to the Electrical Articulation Committee.
	One private trainer had requested to attend the Annual EAC meeting.
	Consensus stands that the Electrical Articulation be composed of Public Institutions.
7. Provincial Adoption of CEC Part 1 2021	<u>Adoption timeline of the CEC Part 1, 2021 for the province of BC</u>
	Jeremiah gave background information about the composition of the Provincial Impact Changes Committee. Technical Safety BC composed code changes that have a high, medium or low impact on the industry (safety, sociology, and cost perspective) back in March.
	CEC part 1 is out for public consultation right now. A few meetings have been set up. There are a few stumbling blocks (e.g., new energy storage), but adoption will hopefully take place at the beginning of 2022.
	Jeremiah said that the changes in the 2021 code book are for the better – e.g. corrections from mistakes in the past code books and other improvements.
	Ted added that there are good changes for the educational community in the new code book. Like the revamp of table 19 and Section 12 about securing cables. Section 26 says now that all receptacles installed outdoors need to be GFCI protected. Section 8 has been revamped along with other improvements.
	Discussion around the adoption timeline and the implications on the ITA and SLEs. Ted said that it would be good if BC would do the same as Alberta, and some other provinces, and have automatic adoption on the changeover (e.g. automatically adopted 2021 on January 2021). There are discussions with the BC government, but results are unknown at the moment.
	Issues were discussed in regard to students not being able to buy the 2015 and 2018 book and how that plays into SLEs. Carmen commented that students might need both code books when working in the field.
	Consistency between institutions is hard to achieve for various reasons. Ted suggests sending a note to the ITA to request that they remove the code portion from SLE's. Carmen added that there is no code outlined in the program outline right now for the SLE.
	Motion 3 put forward by Ted Simmons **Be it moved that all Canadian Electrical Code content be removed from the standard level exams. This is to mitigate the requirement for each standard level exam to be updated every three years, as a cost saving measure for students, and in lieu of clear direction regarding code content.**
	-Seconded by Andy Amboe
	Motion 3 was open for a good discussion. Motion 3 was amended.
	Amended Motion 3 was accepted by Ted Simmons.
	-Seconded by Andy Amboe
	Motion carried (12 in favour, 1 opposed)
	Jeremiah is now putting Motion 2 into question to see if it needs to be amended.

	Motion 4 put forward by John MacMillan **Be it moved that Motion 2 reads "Be it moved that all Electrical Standard Level Exams not be implemented until all exams are updated to reflect both the most current version of the ITA Construction and Industrial Electrician program outlines and to the 2018 and 2021 Canadian Electrical Code if included.** **-**Seconded by Myles Andrew Discussion about the motion. No more discussion requested. Ready to vote. **Motion carried unanimously.**

Item	Discussion
8. BCCAT – British Columbia Council on Admissions & Transfer	**BCCAT updates** Mike Winsemann (BCCAT), Director of Transfer and Technology gave an update. BCCAT manages and coordinates the BC transfer system, which includes 65 Articulation Committees. The BCCAT Spring Update 2021 can be found at https://bccat.ca/pubs/Resources/ACUpdate202104.pdf The BCCAT Micro-Credentials can be found at https://www.bccat.ca/pubs/reports/MicroCredentials2020info.pdf Q: Are there micro-credentials in electrical? A: Mike answered "No", but TRU ran a Renewable Energy micro-credential and Camosun is running Clean Energy and Efficient Buildings micro-credential. Q: In an apprenticeship could the Level of training be theoretically broken down into smaller learning guides? Would they get credits for that? A: Yes Q: English 101 credentials can be easily transferred from one institution to another, so the student can then take English 202 at the new institution. Would it be feasible to create those transfers in trades between secondary institutions? A: Yes, Mike Winsemann can look into that, but he stressed that BCCAT is just the facilitator of the agreement. It is up to the institution to approve the credentials. More details are needed to determine full scope and process. Q: Are private institution courses included in the BCCAT transfer guide? A: If a private institution is in BC and has been given authority to offer a degree program then they are eligible to be listed in the BC transfer guide. Q: Are there any private trades training institutions listed in BCCAT guide? A: None; they currently do not meet the criteria. Q: What is the intent of micro-credentials? Is it a pathway to break down trades into parcels? A: Not heard any intention behind that. It is more to expedite access for unemployed people to training. For follow-up questions please contact Mike at mwinsemann@bccat.ca

Item	Discussion
9. CEC Part 1	Discussion about rule 4-006 and the implementation for code users Ark Tsisserev gave a scintillating talk on Canadian Electrical Code rule interpretations. A Question and Answer period followed. Ted Simmons thanks Ark for his contributions and knowledge. Discussion about Section 10 and the impact of the rewritten section Teds presentation will be distributed to the group following the meeting. A Question and Answer followed.
10. SLP Report	Baldev Pooni (BCCAT) Baldev provided a short report, and will share the slide show of the presentation to BCATTA and ITA to Jeremiah and Nathan to distribute. Q: In regard to the reduced capacities that the ITA had offered during COVID. Did they also give the option to the institutions to double up the number of classes or get extra funding to run 2 classes of 8 rather than single classes of 16? Versus just dropping the number of students just down to 8? A: Did not automatically do anything like that, but if your institution could justify adding classes then they were added. Some of the extra classes were the result of smaller class sizes. People faced problems with capacity. Q: I thought it was to accommodate reduced capacity in rooms? A: Yes. One is to set the capacity based on the size of the room due to social distancing. Other thing was that people were hesitant to come in for face-to-face instruction so numbers dropped. Normally with 12 people you need to contact the ITA to see if you could run the class. Now you could go as low as 6 people without needing permission. Baldev will send the link to the discussion about the private trainers and the three main points. Jeremiah thanked Baldev for his support and being an SLP (System Liaison Person) since November. Nathan agreed. A System Liaison Person helps to facilitate discussion with BCATTA and the ITA.
11. ITA Reports	Jeremiah asked everyone to please review the document Kirsten sent from ITA. Please send questions to Jeremiah and Nathan in the next week so they can forward them to Kirsten. Colleen did not supply any report from the ITA. Q: In past years the ITA has attended. Just curious why this time is different? A: In the last two years ITA provided and reviewed reports, questions were not permitted during the presentation, only questions submitted in writing were addressed. So, for efficiency we asked them to provide reports in advance of the meeting.
12. IP Results	RSOS Review of CE and IE – recently completed. The RSOS review for CE was attended by Jeremiah. and the IE review was attended by Clarence. Following all proper procedures Jeremiah can say without a doubt that there are only minor changes in the report, nothing significant. This means that questions made for the IP based on the updated RSOS still fall in line with the previous RSOS. (e.g., the word "method" was replaced by "procedure"). Clarence confirmed the same for IE. The ITA will hold a meeting on June 9th for 1 ½ hours. An Email has been sent to the Deans. Questions from this

committee will be forwarded to Kirstin.

<u>Exam content and student results</u>
General consensus that pass rate was extremely low, sometimes as low as 37%. This reflects badly on instructors and students.

Due to COVID, one cohort would be divided up in two classes for their exam and even though they had the same instructor, one classes' result was normal and the other one would have a high fail rate. They would have two different exams this caused concerns that one of the exams was much more difficult than the other and it should be reviewed.

The ITA has not been overly helpful in answering questions from colleges, who were inquiring why the failure rate was so high. The ITA said that no problems could be found in their review of the low marks. A high level of frustration was voiced regarding the ITA as they are not transparent with action or processes.

BC Apprentice pass rate on IP was 77% in 2019, 64% in 2020 and only 58% in 2021. These dates correspond roughly with the implementation of Harmonization.

There are multiple exam versions of the IP being given to students in the same class, but only one or two seem to be the problem. Wondering if more due diligence is needed from the ITA to look for discrepancies.

Baldev is going to bring the above to BCATTA.

Action: A letter be sent from the EAC to the ITA regarding concerns about the IP results. New exams should be reviewed before being put out.

Classes seem to have multiple tests in each classroom, making it harder to track which test is performing poorly.

Harmonization and gaps in student resources are most likely two key problems.

Carmen is wondering, if the separation between construction and industrial for harmonized provinces opposed to non-harmonized (especially with the line D item) if there is a connection or disconnection as far as exam content.

Peter said this might be possible as he has been to the test bank workshop. You are relying on people who have a minimum 5 year journeyman experience, who are writing the questions and then you have facilitators there, who don't necessarily have a trades background. There are just people who type the questions, and they are looking for four plausible answers for multiple choice types. If you don't understand the question, you might pick the wrong answer. Those things were troublesome as you have students that only come through a 4-year apprenticeship and they haven't worked in the field yet. So, the wording of the question is really important.

A motion was created during the discussion. Nathan proposes that instead of creating the specifics of the letters now, it would be better to move forward with these motions.

Motion 5 put forward by Nathan Chapin
Be it moved that a letter be written to the ITA regarding the IP results

-Seconded Cary Britton

No discussion requested.

Motion carried unanimously (11 in favour)

Item	Discussion
13. Articulation Chair and Co-Chair	Discussions about the roles and term – Review last year's minutes **Review of last year's minutes: Motion moved in 2020 by Nathan Chapin:** *A co-chair is nominated and appointed by the EIAC at every annual meeting for a one-year term. At the next year's annual meeting the Co-Chair shall become the chair for a one-year term and a new Co-Chair shall be elected. The host institution shall be decided at the annual meeting for the following year.* Nathan Chapin and Jeremiah Williamson raised the question of "How many terms can a member do as they want more members involved? Limit of 2 or 4 years, or are there no concerns?" Generally, no concerns since the Co-Chair is an elected position and anyone can come forward to be elected.

Item	Discussion
14. EAC Elections	**Motion 7 put forward by Jeremiah Williamson** **Be it moved that Jeremiah Williamson is elected the Co-Chair of the EAC.** -Seconded by Ted Simmons. No other nominations. Discussion about extending the term to two years, previous motion was supported. **Motion carried unanimously.** Jeremiah Williamson is the new Co-Chair. As per previous motion and the motion instituted from last year, the following has been decided: Chair for a one-year term: Nathan Chapin Co-Chair for a one-year term followed by Chair for a one-year term: Jeremiah Williamson
15. Any other Business and Next Year's Meeting	Jeremiah thanks Peter Poeschek for mentoring him and others and that he had a great impact on him. Lots of other members agreed and he will be dearly missed. Everyone wishes him well for his retirement. Next Year's meeting may be face to face. Cary Britton initially suggested to talk again after the June 9th meeting and the University of the Fraser Valley would consider hosting it after consulting the Dean. However, after a lively discussion Roger Cannon (KPU) agreed to host next year's meeting but needs to talk to his superiors first before confirming. **Motion 8 put forward by John MacMillan to adjourn the meeting.** -Seconded by Peter Poeschek. **Motion carried unanimously.** Meeting adjourned by Jeremiah Williamson at 4:50 p.m.

2021 BCIT Institute Report - Ted Simmons

BCIT continues to be extremely busy. We currently have 40 Instructors and this year we will deliver 105 Electrical Apprenticeship classes, 24 Electrical Foundation classes and 3 Security System Technician classes. Since the start of this year, we have delivered 12 harmonized level 4 classes and since June of last year, we have delivered "31" harmonized level 3 classes.

BCIT is currently delivering on-line instruction for all levels of the Electrical Apprenticeship program. We recently received notice that our students can return to campus starting in September, which means our classes beginning in October will return to face-to-face instruction. We have modified our shop areas in accordance with the Provincial Health office guidelines to provide our Foundation students with the ability to come to campus and learn the necessary hands-on skills. Although, on-line training has allowed our students to continue their apprenticeship, the inability to complete labs and reinforce the theory being taught on line has had a negative impact on our students overall performance in all levels of the program. This is especially evident in the higher than normal failure rate our students have experienced on the Interprovincial exam. On-line training has also created problems with exam security and it is likely that several exams have been compromised. Considerable time and effort will be required to revise the current exams. Needless to say, we will be glad to get back to face-to-face instruction.

Electrical Articulation Group Members
13 May 2021

Re: North Island College Electrical Section - Institutional report

Overall, it has been a busy year. Our apprenticeship classes looked different as compared to previous years. We used a blended model, where we taught via zoom as a live class, and had the student's book their lab times so we could maintain physical distancing. Luckily our foundations classes were able to move into larger classrooms, allowing us to continue face to face training with those groups. Listed below are some other highlights.
Staffing - We currently have four regularized, and two sessional instructors.
Retirements – Lee Pollack has retired
Student Enrolment - This year we had a total of 13 classes worth of students come through our doors

- Three Foundations,
- One level 1,
- Three level 2 classes,
- Three level 3 classes, and
- Three level 4 classes

Equipment – We received quite a bit of new lab equipment this year. This included motor starters, transformers, multimeters, and new Edwards addressable fire alarm trainers (built in house), for our 4th year classes.
Labs – We recently redesigned several our labs, including the 4th year PLC & process control labs utilizing new Horner PLC's that we integrated into the program last year. New labs around the new fire alarm trainers were also designed.
Space allocation – Over the last few years NIC (Campbell River) went through several significant renovation projects. The electrical section was the final component of the realignment plan. We are now getting an increase in lab space, so there will be rooms dedicated to motor starters, EMS trainers, electronics and fire alarm. Hope everyone has a relaxing summer
Regards,
Trevor

Trevor Petr
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Electrical Institutional Report for Coast Mountain College

The last year has proven to be both busy and challenging for our department.

Challenges have come from a multiple of sources such as:

- Continued adjustments to Harmonization
- Institutional protocol and procedure changes do to Covid-19
- Transferring of our classrooms and assessment to a mix of online delivery and F2F
- Additional circumstances with Instructor availability

Since last year, our department has run the following:

- 2 - Foundation classes (H)
- 1 - Level 1 class (H)
- 1 - Level 2 class (H)
- 2 - Level 3 classes (1CC) + (1H)
- 1 - Level 4 Harmonized class (H)

We currently have 2 full time instructors and have hired 2 term instructors over the year.

The economy in the north coast is continually seeing an increase in activity throughout the region. Projects such as LNG (Kitimat), Mining (Smithers), Port expansions (Prince Rupert), Hospital (Terrace), and Residential/Commercial building (all areas), are the main drivers of growth. Current projections are for this trend to continue for the foreseeable future.

There are plenty of opportunities for our apprentices, with the predictable supply and demand shortages of a growing economy. As restrictions are released, there is optimism that there will be continued growth in our department.

Cameron Thiessen, RSE FSR B
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Selkirk College

Report to Articulation May, 2021

Workload-

We employ 3 full time regularized instructors.

We teach 6 apprenticeship courses and 2 foundation courses annually.

This year we have added 1 extra foundation courses due to demand.

Covid-

We are presently working on campus for two days/week and on Zoom for 2.5 days/week.

'On campus' days we try to fit in our lab and exams as timing permits.

As of Sept, we are considering Monday Friday online, Tues, Wed, Thurs on campus. This gives a break to travelling students from outside our area. Also allows us to teach online during dangerous winter days.

Issues-

DC motor control in year 2. Students struggle as they have not been taught the DC motor function which is in year 3.

We have low confidence in the SLE that are being implemented in Sept.

Frighteningly low pass rates on the IP. Past pass rates compared to present show a disconnect between our instructing, ITA modules and the IP that began approx. 3 years ago. This disconnect must be identified and dealt with immediately.

Happy that the CEC is including an index as we have taught for decades using the index as the first step to successful code searches.

UFV Institutional Report – 2021 EIAC

This past year the electrical department at UFV completed eight apprenticeship classes through base funded programming and another two apprenticeship classes through continued one-time funding. We also completed three foundations programs, including our regular CTC class (a partnership with UFV and local school districts). Some additional continuing studies course were taught as well by some of our faculty, specifically offering online code update/renewal courses and 4 FSR code classes. UFV staff are still struggling with inconsistent and inaccurate apprenticeship numbers when it comes to "student wait lists" for all levels of training. Our wait list numbers are not accurate, as when we start calling students to fill classes, many have already completed or are currently enrolled in a class at other institutions. We are looking into alternatives to try and deal with these inaccurate wait lists including the idea of deposits and also allowing employers the ability to "buy seats".

The department currently consists of four permanent faculty members and two sessional instructors. We are currently in the process of hiring a 5th full time faculty member to our team. Two notable accomplishments from our faculty are; Daniel Smythe, who has recently been appointed to the Board of Directors for Technical Safety BC. (This is the overall board that guides and governs all TSBC and its technologies, not just the electrical component.) and Joel Feenstra who is involved at the national CSA group. He sits as a member on the committee and section subcommittee for the formal review process of two standards that were published last year. The C22.1-18 (Canadian Electrical Code, Part I, 24th Edition), and the C22.2 NO. 66.2-06 (Low Voltage Transformers - Part 2: General Purpose Transformers). He has also seen some of his own proposed amendments accepted.

COVID-19 has continued to cause significant disruption to all our normal programming at UFV, except for a few departments. Since the start of the pandemic UFV Faculty and staff have been required to pivot from the traditional face to face (F2F) format of going about our days business to being almost exclusively an online experience this is expected to continue until this fall at the earliest.

Apprenticeship classes have continued with 100% course content delivery through online utilizing UFV's Blackboard Learn and the Collaborate platforms for virtual classroom along with Zoom as the primary links with students. Instructors are using a broad range of Hardware, Software Apps and On-line sites to assist in the instruction and collaboration components of our courses. Some of these platforms include: YouTube, Kaltura, Kahoot, Zoom, Discord, OBS, Screencast-O-Matic, MS Teams etc. It has been up to each instructor to choose what works best with their class.

For any IP writes the classes have been split into two 8 person groups for the exam invigilation. Since the start of the Pandemic we have seen the average IP marks drop by 5%-15%. This has resulted in a significant increase in the number of students that fail the IP by only a couple percentage points receiving marks of 67% - 69% instead of mid 70's to 80's. We are not sure if this is due to the transition to 100% online and students not having the focus they would normally have or if there are other factors at play such as not having the comfort of filling in scantron forms for the 10 weeks leading up to the exam.

Foundations classes have continued, with the direction that all content that can be taught online to be done so. For practical components students are required to come into the shop space. But due to space constraints of Covid 19 protocols, only 50% of the normal student density is permitted in shop spaces at any one time, making it a challenge for scheduling and supervision.

May 2021 Electrical Articulation

At this point in time all classes scheduled to start after September 2021 we are told, have the potential to be back to "a *new normal* form" of F2F instruction for those that would like to return to the campus, but with options still available: 100% F2F, hybrid (F2F and Online components), and 100% online. Our electrical faculty are somewhat split, with some wishing to return to 100% F2F while others would prefer to utilize a hybrid course (a combination of F2F and Online).

KPU Electrical Articulation 2021 Report

The Good Stuff:

- Hopefully the vaccines will soon make the COVID Pandemic a thing of the past
- We've had a very supportive administration throughout the COVID Pandemic
- Our student numbers continue to grow
- There are now 12 instructors in the Electrical department + 2 instructors in Mechatronics
- The instructors are now proficient with on-line teaching and there is good support for each other within the department.
- Looking forward to soon getting back to in-class instruction
- There are preliminary plans to double the existing footprint of our teaching and lab space
- Anticipated building of a H/V lab
- There has been limited on-campus instruction

The Challenges:

- The 'open-book' nature of exams in an on-line environment
- Level 4 IP pass rates
- The hurry-up-and-wait approach to expansion as we've outgrown our present space
- Maintaining a sense of cohesion within the department despite a fragmented learning environment
- Being able to genuinely connect with students beyond the computer screen
- The move to 'Harmonization'…
- This has not been an easy time for students

Institutional Report 2021 for College of New Caledonia

CNC
The transition from in school learning to online at CNC has gone fairly smoothly with a few hiccups at the start.
All our programs have been full and we limited our intake to 12 students per course, this was mostly to facilitate our shop instruction.
We have currently 5 full time instructors and one sessional instructor. There is a pending retirement and the new job should be posted in the next week or so.
We currently offer two foundation programs every year and one full cohort CTC (Ace-it) class that consists of grade 12 students. We will also offer 2 first year, 2 second year, 3 third year and 2 fourth year apprenticeship classes next year.
We do not offer any classes at this time in our Quesnel campus.
We are also offering a trades discovery program that includes time in the electrical trade.
We also this year hired a new Associate Dean of Trades and Technology, her name is Chris Montgomery.
We are all looking forward to the idea of resuming in class instruction this fall.

John

John MacMillan RSE
Instructor
Electrical

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College of the Rockies Electrical Report   **Jan 2021 to Dec 2021**

Number of Instructors: four full time regular Instructors
Below is our 2021 schedule:

2021 time Period	Class	Date 2021	Instructional Period	Delivery
WINTER	Foundations (ENDING)	Jan 5th to Jan 29th	4 weeks	Hybrid
WINTER	4th year construction	Jan 5th to 8th (GAP training) Jan 11th to Mar 19th	11 weeks	Hybrid
WINTER	2nd year	Jan 11th to Mar 19th	10 weeks	Hybrid
WINTER	Foundations	Feb 9th to July 23rd	24 weeks	Hybrid
~~**SPRING**~~ **CANCELLED**	~~1st year~~	~~Mar 29th to June 4th~~	~~10 weeks~~	Hybrid
SPRING	3rd year	Mar 29th to June 4th	10 weeks	Hybrid
TRADES SAMPLER	Women in trades Baker students	April 12th to April 23rd April 26th to May 7th	2 weeks 2 weeks	
SUMMER	4th year industrial	June 1st to June 3rd (GAP wedge training) June 7th to Aug 13th	11 weeks	Hybrid
SUMMER	Foundations	August 3rd to Dec 10th 2021 <mark>(Jan 4th to Feb 4th 2022)</mark>	19 weeks <mark>(5 weeks)</mark>	In class
FALL	3rd year	Sept 7th to Nov 12th	10 weeks	In class
FALL	2nd year	Oct 4th to Dec 10th	10 weeks	In class
Totals;	-Six apprenticeship classes -Two Foundation classes -two Samplers		Total Number of weeks : 113 weeks	

May 2021 Electrical Articulation

- Hybrid delivery for a 10 week apprentice class basically represents 7 weeks of TEAMS delivery twice a day, and 3 weeks of face to face Lab-time. Our COVID protocol is maximum of 8 students in the Lab space at one time. Lab time is split up when class is over 8 students.

- Between Jan 2020 to Dec 2021 (2 year period), COTR has cancelled the one class because of low numbers.

-

VIU- Shane Dalager

For the 2021-2022 year we are offering harmonized classes: Three foundation, one level 1, three level 2, three level 3 and four level 4. Having worked through the distance learning curve like all institutions we are looking forward to offering a blended instructional method for the fall of 2021. We are looking to re-establish our partnership with National Electrical Trade Council (NETCO) for the installation program for EVSE. As we get back to more of a routine, we are also looking at implementing additional PLC training for Red Seal Electricians. We have a long waitlist for levels 2-4 having somewhere around one hundred. Our challenges are the prep time for ITA Changes from program to program and harmonization of the 4th year construction electrician waiting on final Harmonized ITA binders. For relief instructors we rely on retirees and will be looking to find someone able to stand in when needed. Some of our courses are offered back-to-back. With Covid throwing a wrench into everything we are still looking at our new electrical building is on a 5-7 years away. At VIU we are continuing to build ongoing long-term partnerships with industry and a few million dollars in bursaries go out every year.

TRU Articulation Report 2021

- 10 Full-time Faculty members
- 2 – University Instructors (New Version of Continuing Sessional Faculty member)
- 1 - Sessional Faculty members
- 24 – apprenticeship classes in total –all alternate delivery
- 4 - Foundation classes (3 in Kamloops and 1 in Williams Lake), first 10 weeks of theory on-line, last 14 weeks on site for practical training.
- Delivered a MAEST funded renewable energy program Feb & March, each cohort received theory training on-line and then participated in a practical installation of photovoltaic cells, etc.
- 2 – High School electrical trade samplers
- 2 – Women in trades 2 week sessions
- Every trades program is being reviewed on a case by case basis regarding returning to full face to face classes and labs as of April 1, 2021.
- Electrical Apprenticeship and Foundation classes will be back to full face to face with our August intakes.

Thanks,

      Peter Poeschek

CAMOSUN COLLEGEs Report

- 5 Foundation and 32 apprenticeship classes for Fiscal 20-21
- Camosun has 14 fulltime continuing Instructors and 4 term instructors
- Our department has a Chair, Carmen deGoey, and a Program leader for the Foundation Program, Michael Schroeder
- We have one Lab Technician who is a Red Seal Certified Electrician, builds/updates/maintains equipment and supports students and Instructors.
- Camosun offers special projects: (SIP) South Island Partnership, (WITT) Women in Trades Training, (TASK) Trades and Skills Knowledge, ACE-It high school Foundation and (IPTT) Indigenous Peoples in Trades Training.
- We deliver apprenticeship at some of the penitentiaries through (TDSP) Trades Development and Special Projects.
- Current challenges are: o **Mental health** of students, faculty and staff with the **continued overload** of work, since March 16, 2020, of remote and blended apprenticeship training caused by Covid 19.
o **Lower success rates** on the Construction Electrician Red Seal Exam
o **Lower enrollments, due to Covid**
o Continued remote delivery has taken its toll on the Department, everyone is beyond exhausted.
o Return to Campus planning for the Fall, now and over the summer

- Camosun saw lower enrollments for the first time for the March 2021 intake, but have full cohorts moving forward now for the summer term. Many students deferring to a later date for face-to-face delivery.
- Currently completing 9 apprenticeship and 1 Foundation virtually May 21, with an IP scheduled for 36 students on May 21, 2021.
- Currently onboarding 3 apprenticeship and 1 Foundation May 25, 2021, with 2 Foundation Programs continuing.
- Foundation Program is blended with remote live-streamed classroom sessions and exams. Only essential practicums/labs are taking place.
- Apprenticeship courses are all remote with the option of blended, for particular levels and labs. Our space capacity is 30, so are focusing primarily on the Foundation Program for on campus activities, for employability.
- Currently working on the return to campus plans for fall.
- **Thank you** to my Colleagues for the tremendous amount of work you have all done to keep electrical training possible for our trade and apprentices. It is an honor to be among such dedicated and caring educators.
- **Thank you** to the Articulation Chair Jeremiah Williamson and Co Chair, Nathan Chapin for keeping us together and on track. Your hard work and dedication is appreciated beyond words, and we are grateful for your leadership.
- **Thank you** to Nathan Chapin, Jeremiah Williamson and to all of the members of the Curriculum Sub Committee who have dedicated so much of their time to come together often to discuss the growth of our students resources. Meeting virtually has expedited our growth and is one of the many unseen benefits of meeting online.
Carmen deGoey

Okanagan College Articulation Report. 2020/2021

- As many of you, Okanagan College has faced a huge disturbance in the flow of intakes due to Harmonization and of course COVID.

- We are currently running our yearly status quo Intakes, however at COVID capacity of 12. Level 4's have been at full capacity of 16 since they are fully on line.

- COVID has definitely taken a toll on Okanagan College's yearly work plan with respect to the consistency of returning students and predicting upcoming intakes by admin. In addition to this, prior to COVID, there was a tsunami of students that came through to beat harmonization.

- Since being on line due to COVID, we have seen a decline in pass rates. We found that for some Students are definitely finding it a challenge being on line. That said there are some students who actually prefer the online learning. Moving forward what might work, is a hybrid model, where a student would be on site two if not three days a week and have them online the remainder of the week.

- IP pass rates have dropped, it's somewhere between 70% to 75% pass rate and in some cases 65%, which is way too low. The experiences the Instructors instructing the course bring to the table do not reflect the outcomes of the IP pass rate.

- Total intakes for 2021:
  25 apprenticeship classes and 6 foundation classes, of which two of them start mid-October and run into 2022 (same Fiscal year). The numbers for foundation class demands have gone up as there is a waitlist. The apprenticeship has stabilized, we are currently experiencing smaller waitlists, however gratefully there is one.

- All in all, as many of you, it's been a challenge for all the Instructors keeping their heads above water not only during this Pandemic but also dealing with Harmonization. I am proud as you are all, on how well our Instructors managed all of this and still managed to fulfill and maintain continuity to all our Classes.
  Claudio DiBiase
  Chair of Electrical at Okanagan College

EAC CURRICULUM SUB COMMITTEE ANNUAL REPORT 2021

Our year began with a transition from working with Trades Training BC to re-engaging with Open School BC (OSBC). The first project that was worked on was R6 (Airport Runway Lighting Systems) and R7 (Traffic Signal Lights and Controls) from the Level 4 Harmonized Program Outline. This project was to become Phase I of the Level 4 learning resource update. As a result of this project we were able to bring to attention a list of learning resources that were never completed or required corrections. This list was brought forward to both Colleen Rogan and Anita Handregan of the ITA.

While working on R6 and R7 we began developing an outline for CEC topics taught in each level (This is still ongoing) and also engaged with Cengage Canada regarding the creation of a Code and/or Print custom package for each level. This began do to the fact that the ITA will not be updating learning resources when new editions of the code are released. Cengage now has enough information for their business case and we hope to be hearing from them within a month.

We began the process of Phase II for the Level 4 learning resources in January of this year with Adrian Hill returning as the project manager. The Curriculum Subcommittee has devoted a great deal of time with OSBC and the ITA ensuring that the Phase II project would address all uncompleted learning guides and other omissions that existed in the current level 4 binders. The large scope of the project has caused a few delays with OSBC requiring approval at a higher level than has previously been required. We hope to have the RFQ (Request for qualification) published soon. Once published it will be distributed to the Articulation group at large. In order to get the project completed in a timely manner it is important that anyone who wishes to author or edit apply to the RFQ as soon as possible.

It has also been communicated to the ITA that Levels 1 through 3 have similar omissions and missing learning guides. The ITA has decided that the development of those resources should take place following the completion of Phase II of the Level 4 learning resources.

The BC Trades Module Website has been improved and we are again able to make corrections to the current learning resources. Both students and instructors are able to suggest changes and corrections. The website can be accessed here https://bctradesmodules.gov.bc.ca/.

Another document that the group has been working on is a comparison of the ITAs recommended time per topic and assessment guideline. These two breakdowns are largely similar, with a few exceptions. The identification of these exceptions has prompted what will be a recommendation to make changes to those breakdowns in the program outline to the ITA in the following year. A copy of this document will be distributed with the minutes for those who are interested. It should be noted that all the information is from the ITA outline except for one subjective column that was created to outline a suggested breakdown when multiple learning guides were included under one line item.

This past year your Curriculum Subcommittee has met regularly at least every month and on more than a few occasions more frequently. Members have been encouraged to share information with their departments to ensure that the work the committee is undertaking is transparent and that everyone who wishes to be informed is able to be. Further to that, meeting minutes have been approved by the group throughout the year.

Needless to say this year has been difficult for everyone and I want to acknowledge the hard work and dedication of the Curriculum Subcommittee throughout these trying times. I am confident we can continue improving resources and advocating for our students as this year progresses.

May 2021 Electrical Articulation

Members this past year are: AJ Wearmouth, Carmen deGoey, Jeremiah Williamson, Joel Feenstra, John MacMillan, Mike Dwojak, Myles Andrew, Peter Poeschek, Ron Murray, Shane Dalager, Orlando Wall, Jason Taylor, Trevor Petr, Jason Schapansky, and Mike Turley.

Sincerely,

Nathan Chapin, Curriculum Subcommittee Chair

Northern Lights College

Institutional Report 2020-2021

Northern Lights College Electrical Department
Institutional report for 2020/2021 Technical Training
Prepared by: Andy Amboe
Reviewed by: Mike Dwojak
May 28, 2021

In the Community:

The challenges every educational institute faced during this period of time was also seen at Northern Lights College campuses. Class enrollment was strong at the start of the training period however there has been a decline in waitlisted students. With the major industry in our region being oil and gas construction and maintenance, there has been a prolonged "holding off" of many projects as well as postponing of large maintenance turn arounds. It is a guess as to why this is the case, but much of it comes from COVID safety protocols at large facilities and companies just not willing to take the risk.

The Site C hydro electric project is still the major talk of the area and the construction phase is now seeing some of the major concrete work and actual water diversion/lowering taking place on the Peace River. The expected apprentice employment, in all trades, is less than initially hoped for in our region and the major construction crews are operating shift schedules and staying in a 1600-man camp onsite. One of the busiest places around here is the airport!

With the recent rise in demand for lumber products, Louisiana Pacific is re-opening the OSB plant in Fort St John, bringing a large number of full-time jobs with it and Ft Nelson is opening a pellet plant to bring much needed work to the very north region of the province.

NLC's foundation electrical students are placed on a 2-week work practicum to experience what working in industry is truly like for an electrician. This particular year, placing students on jobsites was far more difficult than previous years giving us a very accurate picture of what is happening in industry at this specific time.

In the Electrical Department:

NLC started in September with 3 full time electrical instructors with January seeing the department back to 2. Prior to classes starting in September, COVID safety plans were written for all lab areas in the electrical department and students are rotating days with their classes to complete labs while following protocols in the plans. The remaining instruction for theory and code is done with synchronous online live lessons, and asynchronous pre-recorded video lessons for students to access and work through using D2L as a platform for the learning material. Asynchronous delivery became more prominent for some students as it was realized the internet infrastructure in this region was not quite capable of moving data for the demand that was placed on it. The platforms for immediate communication and live lesson delivery have become Microsoft Teams, Zoom and WhatsApp.

In person classes are scheduled in September 2021 and the staff here in the electrical department, and the students, welcome a return to a more traditional way of education even if there is still an online component.

Summary of technical training numbers for 2020/2021:

September	Level 1 Apprenticeship
September	Level 3 Apprenticeship
September	Level 4 Apprenticeship
January	Level 2 Apprenticeship
February	Foundation Training
April	Level 1 Apprenticeship (added in with Foundation Students)
April	Level 4 Apprenticeship

This represents approximately **90** apprentices receiving their level training, and **11** students receiving Foundation training.

Respectfully,

Andy Amboe
Instructor, Electrical Program
Fort St. John Campus
Email: aamboe@nlc.bc.ca

ITA Report for Electrical Articulation Committee Meeting

1.   Overview

This report is intended to provide the Articulation Committee with information pertaining to their programs, such as updates to Program Outlines, harmonization, transition plans, and exam statistics.

We in Program Standards want to continue to build ongoing communication and collaboration with our partners in training delivery. The best way to do this is to have regular contact between ITA's Program Standards team and the Chair, Co-chair, and System Liaison Person (SLP) of the Articulation Committee to address concerns as they come up throughout the year.

Any issues or concerns that arise from the Articulation Committee Meeting or throughout the year can be directed to the Committee Chair and SLP to bring forward to the Manager of Program Standards.

2.   ITA Updates

Compulsory Trades

The Provincial Government is working with ITA and other interested parties to reinstate compulsory trades in BC. ITA will provide updates as we receive them.

Suspension and Relaunch of the Standard Level Exams (SLEs)

With the exceptional circumstances surrounding Covid-19, and in the best interests of apprentices and training providers, ITA made the decision to temporarily waive SLEs. Working with training providers and others through the **SLE Working Group**, a target date to reimplement SLEs has been set for September 1, 2021, subject to safety guidelines at that time. **Courses that start on or after September 1, 2021 will be required to write an SLE.**

3.   Construction Electrician and Industrial Electrician Program Updates

Harmonized Program

The **harmonized Program Outline and Program Profile** are posted on the Construction Electrician webpage and the Industrial Electrician webpage on the ITA website. The harmonized program was implemented beginning December 1, 2018.

Revisions made to Levels 2, 3, and 4 of the Program Outlines were posted November 2020 for implementation Jan 1, 2021. A summary of changes can be found as an appendix in the Program Outlines.

Transition to the Harmonized Program

After December 1, 2021, training providers will no longer offer current level 3 (CL3) classes. Apprentices enrolling in level 3 will register for harmonized level 3 (HL3). Training provider support funding is available to help training providers address minor gaps in training. See transition update posted March 2021 for more details.

Training providers are permitted to register a CL2 student in an HL3 class. Training Providers are encouraged to cover gaps in content in a way that suits their delivery model. See transition update posted April 2021 for more details.

As of December 1, 2021, all apprenticeship training classes delivered in BC will be harmonized.

4.   Apprenticeship Numbers

Legend

Reporting/active = an apprentice for whom activity has been logged in the ITA Direct Access System (DA) **within the last 18 months,** e.g., course marks uploaded, or work-based hours reported

Non-reporting/inactive = an apprentice for whom **no** activity has been logged in DA within the last 18 months

TT= technical training (in-school)

0TT = apprentices who have a sponsor and have registered with ITA, but have not achieved any level of technical training

1TT/2TT/3TT/4TT = the highest level that an apprentice has achieved **Data is as of March 1, 2021.**

Construction Electrician Apprenticeship Numbers

CE OLD PROGRAM

Construction Electrician

APPRENTICESHIP Highest Level Achieved	0TT	1TT	2TT	3TT	4TT	Total
Active:	0	0	234	0	1050	1284
Inactive:	0	0	412	0	319	731
Total:	0	0	646	0	1369	2015

CE HARMONIZED PROGRAM

APPRENTICESHIP Highest Level Achieved	0TT	1TT	2TT	3TT	4TT	Total
Active:	1487	1744	1454	1443	20	6148

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Inactive:	1684	927	94	229	2	2936
Total:	**3171**	**2671**	**1548**	**1672**	**22**	**9084**

Industrial Electrician Apprenticeship Numbers

IE OLD PROGRAM

Industrial Electrician						
APPRENTICESHIP Highest Level Achieved	0TT	1TT	2TT	3TT	4TT	Total
Active:	0	0	12	0	35	47
Inactive:	0	0	26	0	10	36
Total:	**0**	**0**	**38**	**0**	**45**	**83**

IE HARMONIZED PROGRAM

Industrial Electrician (Harmonized)						
APPRENTICESHIP Highest Level Achieved	0TT	1TT	2TT	3TT	4TT	Total
Active:	91	52	65	55	0	263
Inactive:	52	15	7	10	0	84
Total:	**143**	**67**	**72**	**65**	**0**	**347**

Construction Electrician Apprenticeship Numbers by Region

Regional numbers are based on apprentice's address, not the school they attend. For a definition of College Regions, see **Appendix A**.

CE OLD PROGRAM							
	REGION	0TT	1TT	2TT	3TT	4TT	Total
1	North	0	0	69	0	99	168
2	South East Interior	0	0	126	0	236	362
3	Island	0	0	79	0	236	315
4	Lower Mainland	0	0	341	0	753	1094
	??	0	0	10	0	34	44
	Other	0	0	21	0	11	32
	Total	**0**	**0**	**646**	**0**	**1369**	**2015**

CE HARMONIZED PROGRAM							
	REGION	0TT	1TT	2TT	3TT	4TT	Total

May 2021 Electrical Articulation

1	North	270	212	87	125	3	697
2	South East Interior	548	410	199	238	3	1398
3	Island	484	469	293	285	1	1532
4	Lower Mainland	1781	1487	929	975	14	5186
	??	65	57	33	31	1	187
	Other	23	36	7	18	0	84
	Total	**3171**	**2671**	**1548**	**1672**	**22**	**9084**

Industrial Electrician Apprenticeship Numbers by Region

Regional numbers are based on apprentice's address, not the school they attend. For a definition of College Regions, see *Appendix A*.

IE OLD PROGRAM							
	REGION	**0TT**	**1TT**	**2TT**	**3TT**	**4TT**	**Total**
1	North	0	0	7	0	7	14
2	South East Interior	0	0	5	0	17	22
3	Island	0	0	8	0	1	9
4	Lower Mainland	0	0	18	0	19	37
	??	0	0	0	0	0	0
	Other	0	0	0	0	1	1
	Total	**0**	**0**	**38**	**0**	**45**	**83**

IE HARMONIZED PROGRAM							
	REGION	**0TT**	**1TT**	**2TT**	**3TT**	**4TT**	**Total**
1	North	27	12	14	8	0	61
2	South East Interior	33	18	18	18	0	87
3	Island	8	6	4	3	0	21
4	Lower Mainland	69	30	33	35	0	167
	??	6	0	3	0	0	9
	Other	0	1	0	1	0	2

Total	143	67	72	65	0	**347**

5. Interprovincial Exams

Exam Statistics Interpretation

When reviewing the statistics, the following should be considered:

Pass Rate — The percentage of candidates who passed the exam

Average Exam Mark — The mean final exam percentage of the total group

MWA Average — The mean percentage scored on each Major Work Activity by the total group

BC apprentice statistics (Pass rate, average exam mark, MWA average) — BC apprentice statistics are for first time writes for those writing with a class

Summary National Pass Rate (IPSE) — Summary National Pass Rate includes apprentice **and** challenger writes for all jurisdictions

Number of Writes — The validity of the statistics increases with the number of writes (i.e. when there is a larger sample size). Therefore, if an exam has a low number of writes (fewer than 100), the statistics alone cannot be used to determine the quality of the exam. This is because outliers (very low or high marks) will skew the results of the group with lower number of writes.

To determine exam quality, statistics must be analyzed in context with other factors including: student feedback on the exam, attributes of the student cohort, and extenuating circumstances.

This is especially important when comparing statistics across periods of time or for different groups. For example, a pass rate of 61% on 250 writes is not comparable with a pass rate of 34% on 50 writes.

Exam Statistics

Construction Electrician IPSE – aligned to 2015 RSOS				
	2017	**2018**	**2019**	**2020**
BC Apprentice Number of Writes	942	1044	1167	1136
BC Apprentice Pass Rate	79%	77%	77%	64%
Summary National Pass Rate	52%	54%	52%	50%

BC Apprentice Average Exam Mark	76%	76%	75%	72%
BC Apprentice Average per MWA A Performs Common Occupational Skills	78%	79%	82%	80%
BC Apprentice Average per MWA B Installs, Services & Maintains Generating, Distribution & Service Systems	78%	77%	72%	72%
BC Apprentice Average per MWA C Installs, Services & Maintains Wiring Systems	79%	76%	77%	74%
BC Apprentice Average per MWA D Installs, Services & Maintains Motors & Control Systems	69%	73%	73%	66%
BC Apprentice Average per MWA E Installs, Services & Maintains Signalling & Communication Systems	78%	77%	77%	73%

Industrial Electrician IPSE – aligned to 2016 RSOS			
Year	**2018 B[1]**	**2019**	**2020**
BC Apprentice Number of Writes	19	42	39
BC Apprentice Average Exam Mark	73%	74%	74%
BC Apprentice Pass Rate	58%	69%	67%
Summary National Pass Rate	32%	41%	45%
BC Apprentice Average per MWA A – Performs Common Occupational Skills	78%	82%	79%
BC Apprentice Average per MWA B – Installs & Maintains Generating, Distribution & Service Systems	77%	77%	78%
BC Apprentice Average per MWA C – Installs & Maintains Wiring Systems	70%	72%	73%
BC Apprentice Average per MWA D – Installs & Maintains Rotating & Non-Rotating Equipment & Control Systems	64%	69%	67%

BC Apprentice Average per MWA E – **Installs & Maintains Signalling & Communication Systems**	62%	65%	62%
BC Apprentice Average per MWA F – **Installs & Maintains Process Control Systems**	79%	79%	78%

[1] 2018 B statistics are limited to writes of exams aligned to 2016 RSOS

Appendix A: College Regions

REGIONS

1.NORTH

2. SOUTH EAST INTERIOR
3. ISLAND

4. LOWER MAINLAND

COLLEGE REGION	Abbrev.	Region
Camosun (Victoria, Sooke, Sidney, Brentwood Bay, Galiano)	CM	3
Capilano (West Vancouver, North Vancouver, Whistler, Bowen Island)	CP	4
Douglas (Burnaby, Coquitlam, Maple Ridge, New Westminster, Anmore)	DG	4
Fraser Valley (Abbotsford, Chilliwack, Hope, Mission, Yale)	FV	4
Kwantlen (Delta, Langley, Richmond, Surrey, White Rock, Aldergrove)	KW	4
New Caledonia (Burns Lake, Mackenzie, Prince George, Vanderhoof)	NC	1
North Island (Campbell River, Comox, Courtenay, Port Alberni, Tofino)	NI	3
Northern Lights (Dawson Creek, Fort St John, Tumbler Ridge, Taylor)	NL	1
Northwest (Terrace, Smithers, Prince Rupert, Houston, Aiyansh, Kitimat)	NW	1
Okanagan (Kelowna, Penticton, Salmon Arm, Vernon, Oliver, Osoyoos)	OK	2
Rockies (Cranbrook, Creston, Fernie, Golden, Invermere)	RK	2
Selkirk (Nelson, Castlegar, Trail, Kaslo, Grand Forks, Robson, Rossland)	SL	2
Thompson Rivers (Kamloops, Williams Lake, Merritt, Lytton, Clinton)	TR	2
Vancouver	VC	4
Vancouver Island (Nanaimo, Gabriola, Parksville, Nanoose Bay, Duncan)	VI	3
Undefined (out-of-province = AB, ON, SK, YT)	unde	OTHER
Not mapped to a college region	??	??